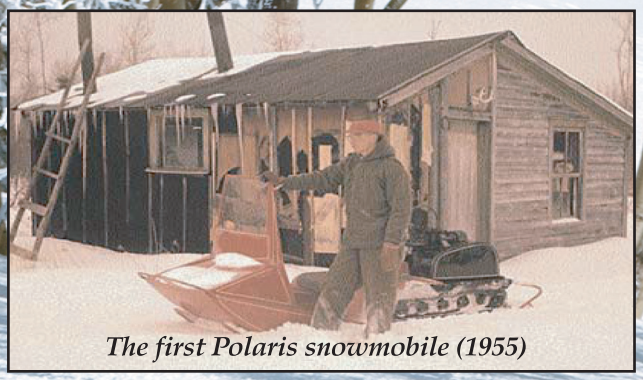
50 YEARS
1954 USA 2004

POLARIS®
The Way Out.

2005

900 RMK
900 SwitchBack

Owner's Manual
for Maintenance
and Safety



The first Polaris snowmobile (1955)

POLARIS
The Way Out.

For your nearest Polaris dealer,
call 1-800-POLARIS
or visit www.polarisindustries.com
Polaris Sales Inc.,
2100 Hwy. 55, Medina, MN 55340
Phone (763) 417-8650 Fax (763) 542-0599
Part No. 9919077 Rev 02
Printed in USA

⚠WARNING

Read, understand, and follow all of the instructions and safety precautions in this manual and on all product labels.

Failure to follow the safety precautions could result in serious injury or death.

PROPOSITION 65 WARNING

Snowmobile engines discharge fuel and exhaust, which contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm, onto the snow on which they operate. Keep this engine properly tuned and avoid unnecessary idling and spillage during fueling.

⚠WARNING

The engine exhaust from this product contains chemicals known to cause cancer, birth defects or other reproductive harm.

50 YEARS
1954 USA 2004
POLARIS

For 50 years we've been helping Polaris customers find The Way Out.

It's been a fun ride. But then, after all these years, That's what we're all about.

Visit our Web site at www.polarisindustries.com

POLARIS®
The Way Out.

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Printed in U.S.A.

2005 900 RMK/SwitchBack Owner's Manual P/N 9919077

WELCOME

Thank you for purchasing a Polaris vehicle, and welcome to our world-wide family of Polaris owners. We proudly produce an exciting line of utility and recreational products.

- Snowmobiles
- All-terrain vehicles (ATVs)
- Personal Watercraft
- Sport Boats
- *RANGER* utility vehicles
- Victory motorcycles

We believe Polaris sets a standard of excellence for all utility and recreational vehicles manufactured in the world today. Many years of experience have gone into the engineering, design, and development of your Polaris vehicle, making it the finest machine we've ever produced.

For safe and enjoyable operation of your vehicle, be sure to follow the instructions and recommendations in this owner's manual. Your manual contains instructions for minor maintenance, but information about major repairs is outlined in the Polaris Service Manual and should be performed only by a Factory Certified Master Service Dealer (MSD) Technician.

Your Polaris dealer knows your vehicle best and is interested in your total satisfaction. Be sure to return to your dealership for all of your service needs during, and after, the warranty period.

We also take great pride in our Parts, Apparel and Accessories (PAA) products, available through our online store at www.purepolaris.com. Have your accessories and clothing delivered right to your door!

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Important Notes for Owners and Drivers

After reading this manual, store it in the snowmobile for convenient reference. It should remain with the snowmobile when sold.

Some of the illustrations and photos used in this manual are general representations. Your model may differ.

Follow the maintenance program outlined in this manual. Preventive maintenance ensures that critical components of the snowmobile are inspected by your dealer at specific mileage intervals.

You and your dealer must complete the registration form included with your snowmobile and forward it to us. This completed form is necessary to ensure warranty coverage.

Protect and preserve your right to ride by joining your local trail riding clubs.

INTRODUCTION
Preservation of the Environment

Polaris is committed to supporting an environmental education campaign. We encourage state and provincial governments across the snowbelt to adopt rigorous safety training programs that encourage protection of our environment, including wildlife and vegetation.

Snowmobile clubs and other organizations are working together to protect our environment. Please support their efforts and operate your snowmobile with consideration for the protection and preservation of our environment.

Noise Level

One of the most publicized issues about snowmobiles is noise. The Society of Automotive Engineers (SAE), the standard-setting body for snowmobile development, recommends that snowmobiles conform to prescribed sound levels.

Polaris snowmobiles are engineered to conform to these SAE standards. Our muffler systems are designed to reduce noise levels and must not be altered or removed. The sound of your snowmobile may not be welcome to non-snowmobilers, so you have a responsibility to operate your snowmobile with concern for others. We do our part by manufacturing quieter machines; we ask your help to further reduce the impact of noise by operating your snowmobile safely and responsibly.

Air Pollution

Polaris engineers continuously investigate ways to reduce emission levels of two-stroke engines. We expect our efforts to lead to the reduction of potential air pollution.

In addition to our technological research, we encourage government agencies, manufacturers, distributors, dealers, ecologists, and other interested parties to work together to develop data on environmental topics.

Vehicle Identification Numbers

Record your snowmobile's identification numbers and key number in the spaces provided. Remove the spare key and store it in a safe place. Your key can be duplicated only by mating a Polaris key blank with one of your existing keys, so if both keys are lost, the ignition switch must be replaced.

Vehicle Model Number: _____

Tunnel VIN (1): _____

Engine Serial Number (on recoil housing): _____

Key Number: _____

SAFETY
Operator Safety

The following signal words and symbols appear throughout this manual and on your vehicle. Your safety is involved when these words and symbols are used. Become familiar with their meanings before reading the manual.

The *safety alert symbol*, on your vehicle or in this manual, alerts you to the potential for injury.

WARNING

The *safety alert warning* indicates a potential hazard that may result in serious injury or death.

CAUTION

The *safety alert caution* indicates a potential hazard that may result in minor injury or damage to the vehicle.

CAUTION

A *caution* indicates a situation that may result in damage to the vehicle.

NOTE:

A *note* will alert you to important information or instructions.

Operator Safety

Follow the recommended maintenance program outlined beginning on page 74 of this manual to ensure that all critical components on the snowmobile are thoroughly inspected by your dealer at specific mileage intervals.

⚠ WARNING

Driving a snowmobile requires your full attention. DO NOT drink alcohol or use drugs or medications before or while driving or riding as a passenger. They will reduce your alertness and slow your reaction time.

Snowmobiles are capable of traveling at high speeds. Use extra caution to ensure operator safety. Make sure your snowmobile is in excellent operating condition at all times. Always check major and vital safety components before every ride.

All Polaris snowmobiles are designed and tested to provide safe operation when used as directed. Failure of critical machine components may result from operation with any modifications, especially those that increase speed or power. DO NOT MODIFY YOUR MACHINE. The snowmobile may become aerodynamically unstable at speeds higher than those for which it is designed. Loss of control may occur at higher speeds. Modifications may also create a safety hazard and lead to bodily injury.

The warranty on your entire machine is terminated if any equipment has been added, or any modifications have been made, to increase the speed or power of the snowmobile.

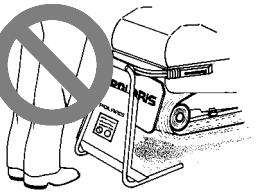
SAFETY
Operator Safety
Stay Clear of Track

Your snowmobile is propelled by a revolving track that must be partially exposed for proper operation.

⚠ WARNING

Serious injuries may result if hands, feet, or clothing become entangled in the track. Be alert when riding, and remain properly seated to stay clear of the track.

Never hold the snowmobile up or stand behind it while warming up the track. A loose track or flying debris could cause serious injury or death. We recommend having your dealer perform all track service and alignment procedures.



Stay Clear of Engine

Never attempt adjustments with the engine running. Turn off the ignition, raise the hood, make the adjustment, secure shields and guards, secure the hood, and then restart the engine to check its operation.

⚠ WARNING

Serious injury can occur if fingers or clothing contact the moving parts of an engine. Always stop the engine before attempting adjustments.

Riding Position

Operating a snowmobile requires skill and balance for proper control. Rider positions may vary with experience; but under most conditions, the proper position is to be seated with both feet on the running boards and both hands on the handlebar grips for proper throttle, brake and steering control.

⚠ WARNING

Improper riding position may reduce control and could result in serious injury or death. Always be properly seated and in position to control your vehicle.

Operator Safety

Survival Preparation

For your safety, always ride in a group of other snowmobilers. Always tell someone where you're going and how long you expect to be gone. If it isn't possible to ride with others, and you must travel into remote areas, always carry survival equipment that's appropriate to the conditions you may encounter. Such equipment may include, but is not limited to: extra clothing, a sleeping bag, a flashlight, food and water, a signaling mirror, a means of building a fire, and a two-way radio or cellular telephone.

For added protection, carry the following items on your snowmobile at all times:

- Spare Drive Belt
- Tow Rope
- Fuel Deicer
- Trail Map
- First Aid Kit
- Extra Set of Spark Plugs
- Extra Oil
- Winter Survival Kit
- Owner's Manual

Riding Apparel

Be prepared, be warm and be comfortable when riding. Be aware of the weather forecast, especially the windchill, and dress accordingly. See the chart on page 22.

⚠ WARNING

Avoid wearing loose clothing or long scarves, which can become entangled in moving parts and cause serious injury. Always wear an approved helmet and eye protection.

SAFETY
Operator Safety
Disabled Operators

Safe operation of this rider-active vehicle requires good judgement and physical skills. Operators with cognitive or physical disabilities have an increased risk of loss of control, which could result in serious injury or death.

Rider Capacity

Your Polaris snowmobile is designed for a single rider only. Do not carry a passenger.

Excessive Speed

⚠ WARNING

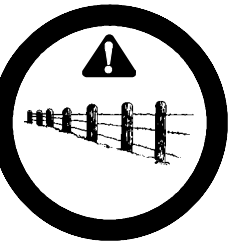
High speed driving, especially at night, could result in serious injury or death. Always reduce speed when driving at night or in inclement weather.

Always observe all state and local laws governing snowmobile operation and speed limits. Always be alert and pay attention to the trail ahead. Multiplying speed (MPH) by 1.5 will equal the approximate number of feet per second your machine travels. If your speed is 40 MPH, your machine is traveling about 60 feet per second. If you look back for only two seconds, your machine will travel about 120 feet. If your speed is 60 MPH, your machine will travel about 180 feet.

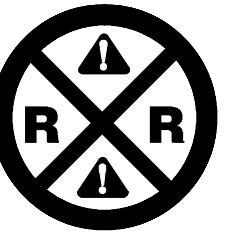
Traveling at night requires extra caution. Check headlight and taillight to ensure proper operation, and don't over-drive your headlight beam. Always be able to bring your machine to a stop in the distance illuminated by the headlight.

Operator Safety

Driver Awareness



Slow down when traveling near poles, posts, or other obstacles. Be especially alert if you're snowmobiling after dark. Always be on the alert for wire fences. Single strands are especially dangerous, since there may be a great distance between posts. Guy wires on utility poles are also difficult to distinguish.



Make sure the way is clear before crossing railroads and other roads and highways. The noise of your machine will drown out the sound of approaching vehicles. Look ahead, behind, and to both sides before turning or crossing railroad tracks or highways. Steep embankments may also hide your view. Always leave yourself a way out.

Variances in snow depth and/or water currents may result in uneven ice thickness. You may drown if you break through the ice. Avoid travelling on frozen bodies of water.

When teaching inexperienced operators to ride, set up a predetermined course for practice. Make sure they know how to drive and control the snowmobile before allowing them to make longer trips. Teach them proper snowmobile courtesy, and enroll them in driver's training and safety courses sponsored by local or state organizations.

SAFETY
Operator Safety
Avalanches

Snowmobilers should always be properly trained and equipped before traveling in mountainous terrain:

- Take an avalanche class
- Travel with experienced people
- Travel on designated trails
- Make sure each person is equipped with a shovel, probe and avalanche beacon.

You don't have to be snowmobiling on a slope for an avalanche to occur. Be aware that all of the snow is connected. You may be riding on a flat slope or snow covered road, but if the snowpack above is unstable enough you can trigger an avalanche on a steeper slope above you. Always be aware of snow conditions above you as you travel in mountainous terrain.

Before riding in mountainous terrain, call or log on to your local avalanche advisory to get current weather and snow stability information.

For more information about avalanche training and avalanche conditions, contact local law enforcement in your area, or visit either the American Avalanche Association online at www.americanavalanceassociation.org or the U.S. Forest Service National Avalanche Center at www.avalanche.org.

Operator Safety

Ice and Snow Build-up

⚠ WARNING

Ice and snow build-up may interfere with the steering of your machine, resulting in serious injury or death. Keep the underhood area free of snow and ice.

Before driving, manually turn the skis to the left and right to be sure ice and snow are not interfering with full left and right steering. If difficulty is encountered, remove ice and snow build-up that may be obstructing the steering linkage.

Driving on Slippery Surfaces

⚠ WARNING

Never attempt an abrupt change of direction when operating on slippery surfaces. Proceed slowly and use extra caution.

Driving on ice or hard-packed snow reduces steering and braking control, which may result in loss of control and serious injury or death. Slow down and use extra caution when operating on slippery surfaces.

Driving Downhill

When riding downhill, shift your weight to the rear of the machine and reduce your speed to a minimum. Apply just enough throttle to keep the clutch engaged, allowing the engine's compression to help slow the machine and keep it from rolling freely downhill.

⚠ WARNING

When driving on long downhill stretches, pump the brakes. Riding the brakes may cause the brake system to overheat, which may result in brake failure.

Excessive or repetitive use of the brakes for high speed stops will also cause an overheated brake system. This condition may lead to a sudden loss of brakes and/or fire and may result in serious injury or death.

SAFETY
Operator Safety
Driving in Hilly Terrain

⚠ WARNING

Climbing a hill or crossing the face of a slope may result in loss of balance and machine roll-over, causing serious injury or death. Use caution and good judgement when driving in hilly terrain.

Use extra caution when operating in hilly terrain. If climbing a hill is unavoidable, keep your weight low and forward. If you must cross the face of a slope, keep your weight on the uphill side of the machine to maintain proper balance and avoid possible roll-over.

Slow down when reaching the crest of a hill. Be prepared to react to obstacles, sharp drops or other people or vehicles that may be on the other side of the hill.

If you're unable to continue up a hill, turn the machine downhill before it loses momentum. If this isn't possible, spin the track just enough to dig in to prevent it from rolling back down the hill. Stop the engine and set the parking brake (if equipped). Keeping away from the downhill side of the machine, pull the rear of the snowmobile around and point the front end and skis downhill. Remount the machine, restart the engine, release the parking brake, and descend the hill carefully.

Operator Safety

Drive Belt

Do not operate the engine with the drive belt removed.

Any servicing that requires operation without a belt must be performed by your dealer. Operation of the engine with the belt removed may result in injury or damage to the engine.

Intake Silencer

Do not operate the engine with the intake silencer or filter removed.

Damage to the engine may occur if the intake silencer or filter are removed.

Clutches

Do not attempt to service the clutches.

All clutch service must be performed by your dealer. The clutch is a complex mechanism that rotates at high speeds. Each clutch is dynamically balanced before installation. Any tampering may disrupt this precision balancing and create an unstable condition.

Cold Weather Drive-Away

Whenever your snowmobile has been parked for a length of time, especially overnight, always make sure the skis and track are loosened from ice and snow before attempting to drive. Apply the throttle with enough authority to put the machine into motion, but always operate within safety limits.

Maneuverability

While much control and maneuverability is achieved through the steering system and skis, maximum control is achieved by the shifting of your body weight. Maneuverability will change for lighter operators or machines designed to carry a load.

SAFETY
Operator Safety
Inadequate Snow Conditions

⚠ WARNING

Do not drive for prolonged periods on blacktop, gravel, or ice. Doing so could cause irreversible track damage and lead to serious injury.

Since snow provides the only lubrication for the power slide suspension and, on liquid cooled models, cooling for the engine, adequate snow cover is a requirement for operation of your machine. Driving in too little snow will result in excessive wear and damage to the slide rail, track and/or engine.

If the machine becomes stuck in snow, clear the running board area of snow, then step down the snow in front of the machine so that when the throttle is opened, the snowmobile will be able to climb up and over the snow.

⚠ CAUTION

When operating on icy surfaces or hard-packed snow, avoid overheating the slide rail and track. Lack of lubrication and cooling will cause overheating of the slide rail and track, resulting in premature wear and failure. If frequently operating in low cooling conditions, see your dealer for an optional wheel kit that will reduce the wear from overheating.

Operator Safety

Driving Responsibly

Every snowmobile handles differently, and even the most docile conditions may become dangerous if operators drive improperly. If you're new to snowmobiling, acquaint yourself with the machine and with what it will and won't do under various conditions. Even seasoned drivers should spend some time getting the feel for a machine before attempting ambitious maneuvers.

- A snowmobile depends on the rider's body position for proper balance in executing turns, traversing hills, etc. Always start on a smooth, level area to begin building your operating experience.
- Before allowing someone else use your snowmobile, know the extent of their operating skills. Check to see if they've taken a snowmobile safety course and have an operator's certificate. For their protection, as well as yours, make sure they take a snowmobile safety course. Everyone can benefit from the course.
- Don't "jump" your snowmobile. Jumping may injure your back because of spinal compression. The seat and suspension of your snowmobile have been designed to provide protection under normal riding conditions. Your snowmobile is not intended for this kind of use.
- Be courteous to oncoming traffic by dimming your headlights and reducing your speed.
- When traveling in a group of snowmobiles, don't tailgate (follow too closely). Allow ample stopping distances, and keep track of those following you. Drive defensively to avoid accidents.
- Remove the key from the ignition when you leave the snowmobile unattended.

SAFETY
Operator Safety
Windchill/Temperature Charts

The following information is provided to help you determine when temperatures become dangerous for riding.

WIND CHILL CHART (°F)

Estimated Wind Speed in MPH	Actual Thermometer Reading (°F)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
	Equivalent Temperature (°F)											
Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	4	-9	-21	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-36	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-124
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-49	-67	-82	-98	-113	-129	-145
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148
Wind Speeds Greater Than 40 MPH Have Little Added Effect	Little Danger (For Properly Clothed Person)				Increasing Danger			Great Danger				
					Danger of Freezing Exposed Flesh							

WIND CHILL CHART (°C)

Estimated Wind Speed in KPH	Actual Thermometer Reading (°C)									
	5	0	-5	-10	-15	-20	-25	-30	-35	-40
	Equivalent Temperature (°C)									
0	5	0	-5	-10	-15	-20	-25	-30	-35	-40
10	1	-4	-11	-16	-22	-27	-33	-38	-45	-50
20	-4	-9	-17	-23	-29	-36	-42	-48	-54	-61
30	-7	-13	-21	-28	-35	-42	-48	-55	-63	-69
40	-9	-16	-24	-32	-39	-47	-53	-61	-69	-76
50	-11	-18	-26	-34	-41	-49	-57	-64	-73	-80
60	-12	-19	-27	-35	-43	-51	-59	-66	-75	-82
70	-13	-20	-28	-36	-44	-52	-60	-68	-76	-84
Wind Speeds Greater Than 70 KPH Have Little Added Effect	Little Danger (For Properly Clothed Person)			Increasing Danger			Great Danger			
				Danger of Freezing Exposed Flesh						

Safety Decals and Locations

Warning decals have been placed on the snowmobile for your protection. Read and follow the instructions of the decals and other warnings on the snowmobile carefully. If any of the decals depicted in this manual differ from the decals on your snowmobile, always read and follow the instructions of the decals *on the snowmobile.*

If any decal becomes illegible or comes off, contact your Polaris dealer to purchase a replacement. Replacement *safety* decals are provided by Polaris at no charge. The part number is printed on the decal.

Clutch Cover Warning

This warning decal is found under the hood on the clutch cover:

⚠ WARNING
⚠ AVERTISSEMENT
Do not operate engine with hood open.
Ne faites pas fonctionner le moteur lorsque le capot est ouvert.
Do not attempt adjustment with engine running.
N'effectuez aucun ajustement lorsque le moteur est en marche.
Do not operate engine with plenum/belt guard removed.
Ne faites pas marcher le moteur avec le plenum/garde-courroie retiré.
Never run engine with drive belt removed.
Ne laissez jamais le moteur en marche lorsque la courroie d'entraînement est retirée.
Never service clutches yourself - - see your dealer.
Ne réparez jamais l'embrayage vous-même - - voir votre concessionnaire.
7172672

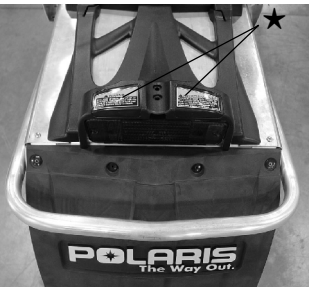
Pressure Cap Warning

This warning decal is found under the hood on the pressure cap of applicable liquid cooled models:

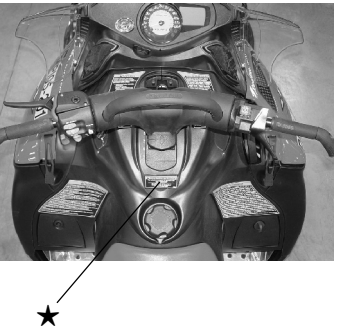
Do not open hot. Test or replace when changing coolant. Press down and turn to release cap. 13 PSI

SAFETY
Safety Decals and Locations
Track Warning

Stay clear of track. Do not sit on seat back. Entanglement with the track or a fall from seat back may result in severe injury or death.



“No Passenger” Warning



Safety Decals and Locations

Reverse Warning

Reverse operation, even at low speeds, may cause loss of control resulting in serious injury or death. To avoid loss of control, always:

- **Look behind before and while backing.**
- **Avoid sharp turns.**
- **Shift to or from reverse only when stopped.**
- **Apply throttle slowly.**

NOTE: For more information, see Owner's Manual.

If electric reverse:

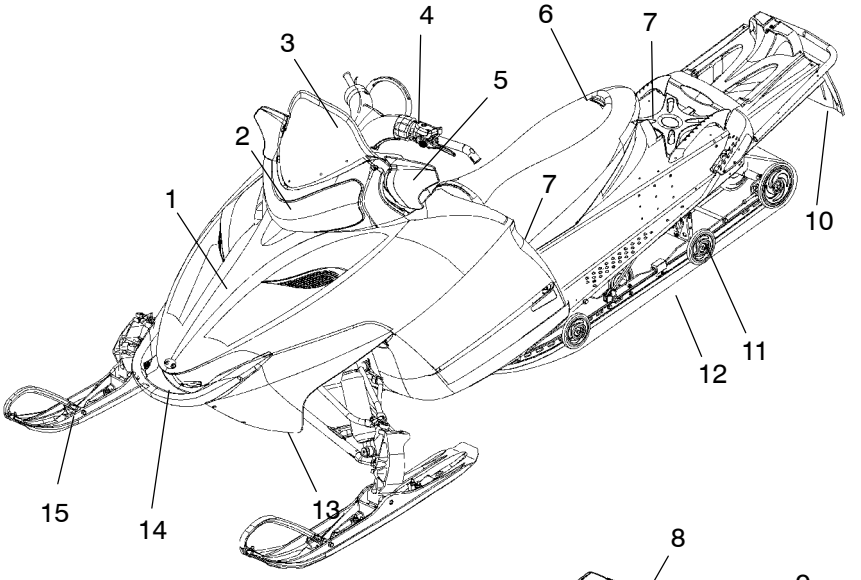
- **Machine stopped and engine at idle, push yellow button on LH control to reverse. Flashing light on dash indicates reverse operation.**
- **Push button again to return to forward.**
- **Elevation setting (above 6000 feet): push and hold for longer than 5 seconds to set. Let go of button at desired setting-fast flash for high elevation, slower flash for low. Setting will remain until changed.**

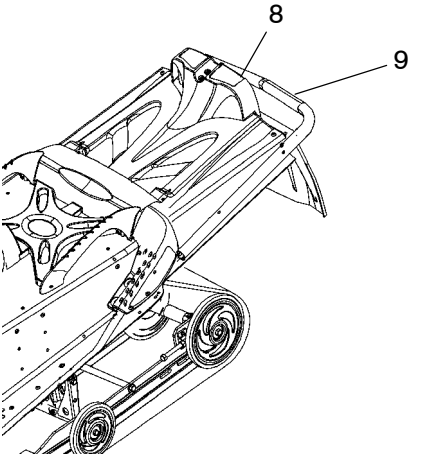
SAFETY
Safety Decals and Locations
Operation Warning

- To avoid serious injury or death, read and understand all warnings and the Owner's Manual before operation. If the manual is missing, contact a Polaris dealer for a replacement.
- This vehicle is capable of high speeds. Buried objects or uneven terrain can cause loss of control. Reduce speed and use extreme caution when operating in unfamiliar terrain.
- Excessive speed, especially at night or with limited visibility, can result in insufficient time for you to react to terrain changes, to avoid unexpected obstacles, or to stop safely.
- Never consume alcohol or drugs before or while operating this vehicle.
- In an emergency, push down the Auxiliary Shut-Off Switch, located on the top of the throttle control assembly, to stop the engine. Then pull the brake lever to stop.
- Always wear an approved helmet, eye protection, and adequate clothing while operating this vehicle.
- This vehicle is designed for adult use only. Check local laws for age requirements.
- When operating with a passenger (on approved models only) reduce speed and allow extra space for steering and stopping. A passenger reduces your ability to control the vehicle.
- When operating on hard-packed snow, ice, or when crossing roads, steering and braking ability are greatly reduced. Reduce speed and allow extra space to turn or stop.
- To maintain vehicle control on ice or hard-packed surfaces, you should have a proper balance of ski carbides to track studs. See Owner's Manual for proper use of traction products.
- Repeated stops from high speed may cause fading or sudden loss of braking ability.
- Parking brake may relax when used for long periods. Do not leave brake engaged for more than five minutes.
- Before starting engine, check throttle, brake, and steering for proper operation. Make sure hood is latched. Be seated and in position to control the vehicle.

Oil injection system: Use unmixed fuel only. Check oil level when refueling.

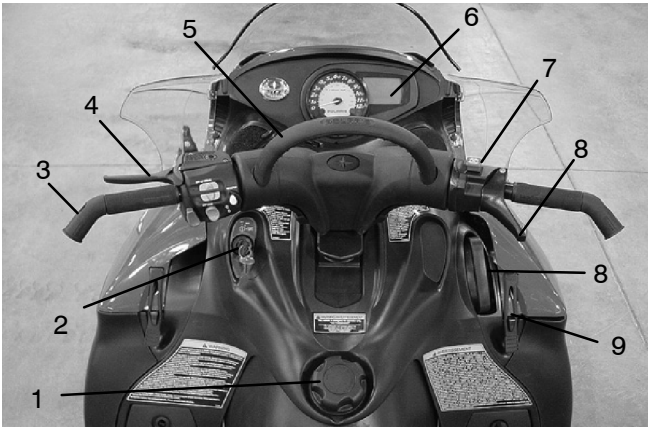
FEATURES



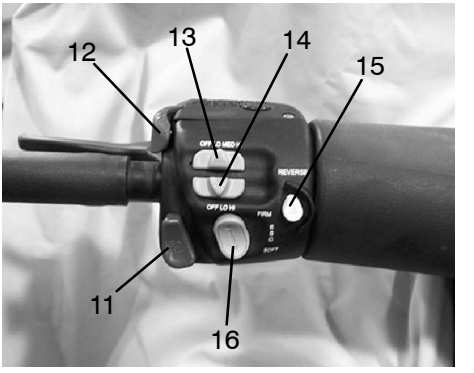


1. Hood
2. Headlight
3. Windshield
4. Handlebar
5. Side Shield
6. Seat
7. Storage Compartment
8. Taillights
9. Rear Bumper
10. Snow Flap
11. Suspension
12. Track
13. Nosepan
14. Front Bumper
15. Skis

FEATURES



1. Fuel Filler Cap
2. Ignition Switch
3. Handlebar hook
4. Brake Lever
5. Mountain Bar
6. MFD (Multi-Function Display)
7. Engine Stop Switch
8. Throttle Control
9. Hood Hold Down Straps
10. Recoil Starter Handle
11. Headlight Dimmer Switch
12. Parking Brake
13. Handlebar Grip Warmer Switch
14. Thumbwarmer Switch
15. Electronic Reverse Button
16. MFD Control



RIDER SELECT Adjustable Steering System

The RIDER SELECT adjustable steering system allows you to adjust the handlebar position to fit your style of riding.

⚠ WARNING

Attempting to adjust the handlebar position while the snowmobile is moving could result in loss of control and serious injury or death. Always stop the snowmobile before attempting to adjust the steering system.

1. Stop the snowmobile.
2. Press the release button and move the handlebar forward or rearward to the desired position.

Setting	Position	Riding Style
Comfort	1, 2	Pull the system rearward to one of the first two positions for all-day trail riding comfort.
Control	3, 4, 5	Move the system to one of the middle three positions for improved handling and cornering on the trails.
Attack	6, 7	Push the system forward to one of the last two positions for easy sitting-to-standing transitions and maximum agility in rugged terrain.

⚠ WARNING

Do not lubricate the RIDER SELECT mechanism. Doing so could cause loss of control and result in serious injury or death. The RIDER SELECT mechanism is lubricated for life at the factory.

⚠ WARNING

Some aftermarket accessories (including windshields and cargo bags) may interfere with the handlebar. Such accessories could limit your ability to steer the vehicle and/or may contact the brake lever. This could lead to loss of control resulting in serious injury or death. Always be sure that accessories do not contact the handlebar or brake lever at any steering position *and* at any RIDER SELECT position.

FEATURES

Seat Storage Compartment

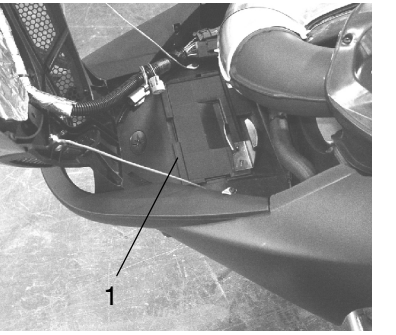
Lift the seat lever (1) and lift the seat to access the under-seat storage area.

Adjustable Headlights

Adjust the headlight beam by moving the adjuster to the left or right.

Access Panel

The access panel (1) is provided for cleaning out debris and making repairs.



Detonation Elimination Technology (D.E.T.)

A detonation sensor monitors the engine and responds to detonation by automatically reducing the engine timing and adding fuel. This results in decreased engine RPM and performance.

DET Troubleshooting

Use this chart to determine causes and solutions for detonation. If none of these conditions exists and the sensor remains activated, see your Polaris dealer for diagnosis.

Possible Cause	Solution
Poor quality fuel	Replace with higher quality fuel
Improper engine modifications	Do not modify the engine

Effect of DET

The DET system prevents damage to the engine from detonation while developing the maximum power of the engine safely. If the system senses detonation beyond a preset limit, it retards ignition timing and adds fuel to reduce the detonation and prevent engine damage.

When the detonation returns to a permissible level, the system will return spark and fuel to normal, allowing the engine to run at rated power levels.

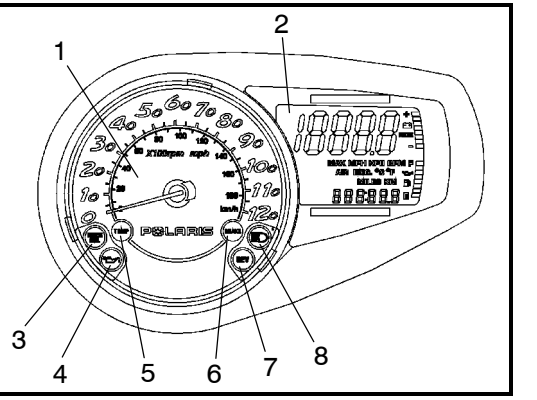
Sensor Fail-Safe

The DET includes a sensor fail-safe system to prevent the engine from damage if the sensor fails, becomes disconnected or is unable to detect detonation. The rider will experience a loss in power. The sensor must be reconnected or repaired to regain full power.

NOTE: The check engine light will flash six times if the sensor fails or becomes disconnected.

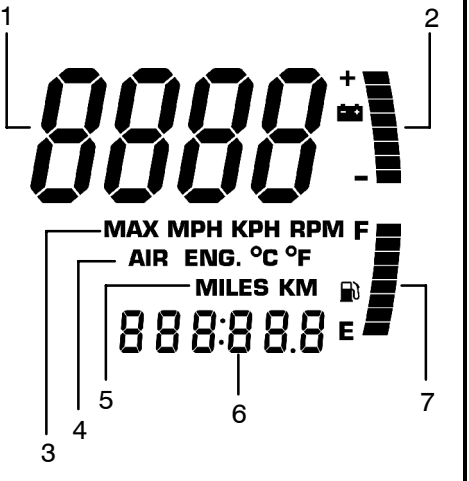
FEATURES
Instrumentation
MFD Component Identification

	Item
1	Analog Gauge
2	Digital Gauge
3	Check Engine Indicator
4	Low Oil Indicator
5	High Temp Indicator
6	Brake Indicator
7	Reverse Indicator
8	High Beam Indicator



Digital Display Identification

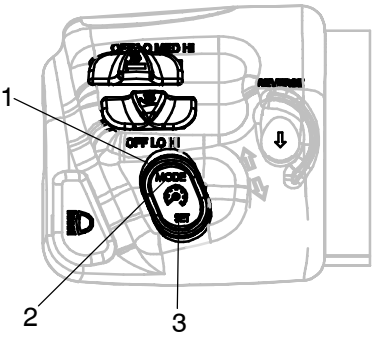
	Item
1	RPM or Speed Altitude (if equipped) Service Interval
2	Electrical System Voltage Level
3	MAX - Maximum MPH/ KPH or RPM MPH - Miles per hour KPH - Kilometers per hour RPM - Engine crankshaft revolutions per minute
4	Air Temp (if equipped) Engine Temp) Degrees Celsius Degrees Fahrenheit
5	Miles Kilometers
6	Hours Trip 1/Trip 2/Trip F Service Label Altitude Label
7	Fuel Level



Instrumentation

MFD Settings

With the engine running, use the MFD Control Switch (1) to set the MFD display to your preference. The rocker switch has a MODE button (2) and a SET button (3).



Standard vs. Metric

The MFD will display either standard or metric units of measurement. While viewing a screen that displays measurements (MPH, KPH or temperatures), press and hold the MODE switch until the unit of measurement changes (about 10 seconds).

Speedometer/Tachometer

The speedometer and tachometer can be viewed in either the analog or the digital display. If the analog display is set to show speedometer readings, the digital screen will automatically display the tachometer (option 1). If the analog is set to show the tachometer, the digital screen will show the speedometer (option 2).

To change preferences, press and hold the MODE button for three seconds. When the button is released, the new setting becomes active and screen colors change. See table below.

Option	Analog Display	Digital Display	Analog Screen	Digital Screen
1	Speed	RPM	Blue “mph”	Blue Backlight
2	RPM	Speed	Red “X100rpm”	Red Backlight

FEATURES
Instrumentation
MFD Digital Display Programs

Press the MODE button to cycle through the three MFD programs: Performance, Engine and History. Each program will remain in the display until another is selected.

NOTE: The analog will always display either MPH or engine RPM (whichever setting is selected) regardless of the display program being viewed.

Performance Program

The Performance Program automatically displays either speed or tachometer, whichever is opposite the analog display. See page 33. It also displays electrical system voltage and fuel levels.

While in the Performance mode, press the SET button to cycle through the odometer, Trip 1, Trip 2, Trip F and Clock settings.

Trip Settings

Trip 1 and Trip 2 are odometers used to check fuel mileage or to keep track of distance traveled.

1. To reset a trip odometer to zero, enter the Trip 1 or Trip 2 display.
2. Press and hold the SET button for two seconds.

Trip F automatically displays if the fuel level is low. The fuel symbol and the last fuel bar on the MFD gauge will blink when the fuel level reaches 1/8th tank. The Trip F odometer records distance traveled until enough fuel is added to raise the level above 1/4 tank. The fuel symbol and the fuel bar will continue to blink until the fuel level is above 1/4 tank. The Trip F odometer will automatically reset to zero after refueling.

Odometer Setting

The odometer records the vehicle's total distance traveled since manufacture. The odometer cannot be reset.

Instrumentation

MFD Digital Display Programs

Performance Program

Clock Setting

1. While in the CLOCK display, press and hold the SET button for five seconds.
2. When the hour starts flashing press the SET switch once to advance one hour, or press and hold the SET button to advance the hour once every 0.2 seconds.
3. Press the MODE button to save the hour and flash the minutes.
4. Set the minutes in the same manner.
5. When finished, press the MODE button to save the new setting.

NOTE: If the MODE button is not pressed within ten seconds, the clock will automatically save the new entry.

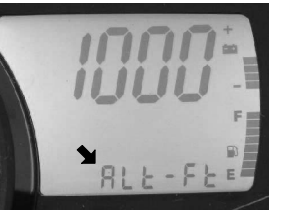
Engine Program

The Engine Program automatically displays the engine coolant temperature, engine hours, electrical system voltage level and fuel level. On machines equipped with altimeter sensor and ambient air temperature sensors, altitude and ambient air temperature will display as additional screens in the engine program. Press the SET button to display the ambient air temperature and altitude screens (if equipped).

Air Temperature (if equipped)

The MFD displays actual air temperature. Press and hold the MODE switch for ten seconds to switch between standard and metric units of measurement.

FEATURES
Instrumentation
MFD Digital Display Programs
Altitude (if equipped)



The rider can calibrate the altimeter for current atmospheric conditions. Altimeter accuracy will be +/–300 ft. (91 m) after adjustment.

NOTE: Press and hold the MODE switch for ten seconds to switch between standard and metric units of measurement. When "ALt" displays, the program is in the metric mode.

1. Enter the Engine Program and select the altimeter display.
2. Press and hold the SET button for five seconds.
3. When the digits begin to flash, press the SET button once to advance 50 feet (15 m), or press and hold the button to advance 100 ft. (30 m) every 0.1 seconds. Adjust the altitude display to within 50 ft. (15 m) of current altitude.

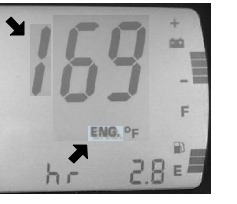
NOTE: The gauge reads barometric pressure and allows the rider to compensate for daily fluctuations in air pressure. The gauge can adjust the displayed altitude to +/– 1300 ft. (396 m) from the preset value. It will adjust up to +1300 ft. (396 m) above the calibrated altitude. Once the +1300 ft. (396 m) offset has been reached, the next adjustment is –1300 ft. (396 m) from the calibrated altitude, and 50 ft. (15 m) will be added to the altitude each time the SET button is pressed.

4. Press the MODE button to hold the reading at the adjusted value. If the it's not pressed within five seconds, the gauge will automatically save the new setting.

Hour Meter

The hour meter records the total hours of engine operation since manufacture. This meter cannot be reset.

Engine Temperature



A thermometer measures water temperature, giving an indication of engine temperature.

Instrumentation

MFD Digital Display Programs

History Program

The History Program automatically displays electrical system voltage level and fuel level.

While in the History mode, press the SET button to view maximum vehicle speed, maximum engine rpm or the current service interval setting. The gauge automatically logs the maximum speed and engine rpm even if the History Program is not currently displayed.

The History Program will display the history of the Maximum Speed, Maximum RPM and Service Interval settings.

Maximum Speed/RPM Reset

While in either the MAX MPH or the MAX RPM mode, press and hold the SET button for three seconds to reset the recorded maximum values for both MPH and RPM. Both of these values are reset at the same time. Reset the MAX MPH/RPM values before each run to obtain accurate readings.

NOTE: Due to electrical noise, the MFD may occasionally display MAX MPH/RPM values that are not representative of actual values.

FEATURES
Instrumentation
MFD Digital Display Programs
Service Interval Reminder

The gauge logs the number of engine hours between service reminders. When the logged hours reaches the designated service interval (set by the user), the gauge provides a reminder that service is due. “SErVCE” will flash in the odometer area and “ENG” will flash in the icon area for five seconds each time the vehicle is started until the service reminder is reset.

To reset the reminder at the existing interval:

1. Enter the service interval screen.
2. Press and hold the SET button for ten seconds, continuing to hold even after the display begins to flash.
3. When the display stops flashing, release the button. The service interval has been reset.

To reset the reminder at a new interval:

1. Enter the service interval screen.
2. Press and hold the SET button for five seconds, until the hours begin to flash.
3. Immediately release the button.
4. Press the button again up to five times to advance the reminder in 50-hour increments.

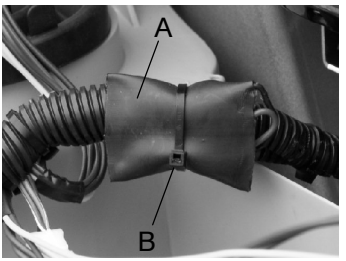
NOTE: The maximum interval is 250 hours.

To disable the service interval reminder, press the SET button once after reaching 250 hours on the display. The gauge will display “OFF”.

Instrumentation

MFD Battery Replacement

If the clock function of the MFD isn't working properly, replace the battery. Replacement batteries are available from your dealer.



1. Remove the plenum from the underside of the hood.
2. Locate the black battery compartment (A). It has a red wire and a brown wire with a white stripe. It's located about three inches down the main harness from the point where the harness connects to the MFD.
3. Cut the plastic cable tie (B) from the outside of the compartment.
4. Carefully cut the bottom of the compartment (opposite the wires) to separate the heat-sealed seams. Squeeze the corners of the compartment inward so the battery (C) is visible.

NOTE: Note the orientation of the battery before removing it. An incorrectly installed battery will not maintain the clock.

5. Using needle-nose pliers, grasp the battery and rotate it slightly so the leading edge of the battery is raised slightly away from the battery holder. Pull the battery out gently.

NOTE: The battery will not come out of the holder unless the leading edge of the battery is raised. Hold the battery compartment, not the wires, while removing the battery. Pulling on the wires will separate them from the battery holder.

6. Install a new battery with fingers only.
7. Seal the end of the battery compartment using high strength double-sided tape between the two compartment halves or high strength single-sided tape around the outside of the compartment.
8. Make sure the taped seam of the compartment faces the downward side of the wire harness.
9. Install a cable tie to secure the compartment to the wire harness in the same location where the previous cable tie was located. Make sure the battery wires are not stretched tight.

FEATURES
Instrumentation
Gauge Cleaning

1. Wipe the gauge face as needed using a clean cloth and a mild soap and water solution. Wipe dry with clean, soft cloth.
2. Clean the back side of the gauge using a clean cloth and a mild soap and water solution. Do not remove the electrical connectors or protective rubber boot. Do not spray the back side of the gauge or the wire harness with a pressure washer or other water source.

CAUTION

To prevent damage to the lens, do not use alcohol for cleaning. Do not allow chemicals or sprays to come into contact with the lens. Immediately clean off any gasoline that splashes on the gauge during refueling.

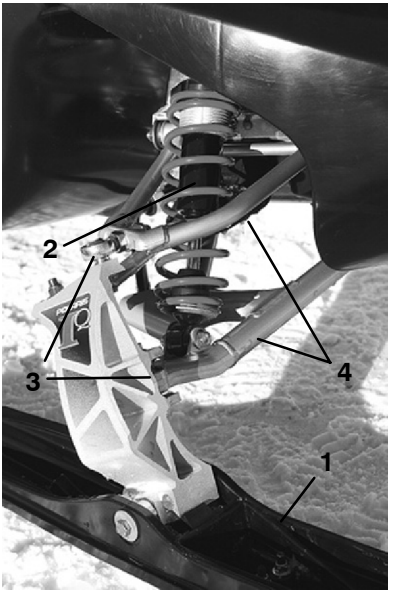
IQ Front Suspension Adjustments

Break in the suspension for approximately 150 miles (240 km) before making any fine-tuning adjustments.

Settings will vary from rider to rider, depending on rider weight, vehicle speed, riding style, and trail conditions. We recommend starting with factory settings and then customizing each adjustment individually to suit rider preference. The machine should be methodically tested, one change at a time, under the same conditions (trail and snow conditions, vehicle speed, riding position, etc.) after each adjustment until the best ride is achieved.

Independent Front Suspension (IFS)

The IFS is made up of the skis (1), front shocks and springs (2), and the components that connect these parts to both the steering, such as the tie rods (3), and to the machine itself, such as the upper and lower control arms (4). Front suspension adjustments include shocks, springs, toe, and camber.



IFS Components

1. Skis
2. Front shocks and springs
3. Rod ends
4. A-arms

IFS Adjustment Options

- Compression damping
- Front shock spring preload (premium only)
- Optional springs
- Optional shock valving (premium only)
- Toe (ski alignment) (see page 105)
- Camber (see your dealer)

THE PERFECT FIT
IQ Front Suspension Adjustments

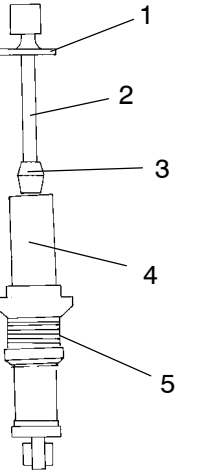
⚠ WARNING

Always verify ski alignment before making adjustments to the IFS. See page 105 to check alignment. If the skis are misaligned, see your dealer, as the camber adjustment may also be affected.

The tension at which the shock coil spring is set is called spring preload. For the best ride, the suspension should be adjusted to use the full travel of the shocks with occasional *light* bottoming. To determine if your machine is using full travel, push the jounce bumper down on the shock rod until it contacts the body and test ride the machine. The bumper will move up on the rod in relation to the amount of travel that was used during the ride. If the travel is full, the bumper will be seated at the top of the rod.

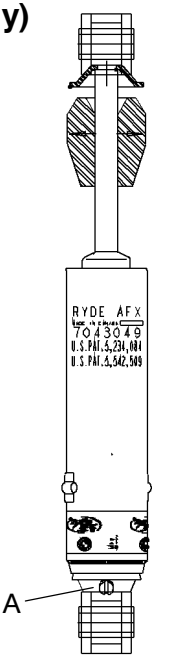
Shock Absorber Components

1. Retainer
2. Shock Rod
3. Jounce Bumper
4. Body
5. Threaded Spring Preload Adjuster Nut (premium only)



IQ Front Suspension Adjustments

Shock Compression Damping (Standard Only)



Adjustments to the compression stiffness of Indy Select shocks can be made by turning the adjustment screw (Select) located near the base of the shock (A). This adjustment is the easiest to perform and it should be considered first.

The factory setting for this shock is the softest position, with the adjusting screw all the way out (counterclockwise). If bottoming occurs, the Indy Select feature should be used to achieve the desired ride. The shocks have a wide range of adjustment capability. By turning the screw clockwise, the compression damping of the shock increases, stiffening the ride.

When adjusting these shocks, we recommend that you turn the screw only 1/4 turn at a time, then test ride. Always adjust both left and right shocks equally.

THE PERFECT FIT
IQ Front Suspension Adjustments
Front Shock Spring Preload (Premium Only)

Increasing spring preload will increase ski-to-ground pressure. Decreasing spring preload will decrease ski-to-ground pressure. When adjusting, be sure the springs on both the left and right sides of the machine are at the same adjustment.

To increase front shock spring preload, grasp the spring and turn it to the left. Turn it to the right to decrease preload. Illustration B indicates high preload and illustration C indicates low preload.

Increasing the spring preload too much may adversely affect the handling of the snowmobile and the performance of the suspension. Never exceed one inch of preload beyond the factory settings, and ensure that both sides are adjusted the same. When decreasing preload, make sure at least two turns of preload are holding the spring between the retainer on top of the shock and the threaded spring preload adjuster nut on the shock body.

B

C

IQ Front Suspension Adjustments

Shock Valving (Premium Only)

Some shocks can be revalved if spring preload alone isn't sufficient and further adjustment is desired to control suspension stiffness.

⚠ WARNING

Changing shock valving on shocks requires special tools and a sound knowledge of mechanical theory, tool use, and shop procedures to perform the work safely and correctly. Shocks contain high-pressure nitrogen gas. Use extreme caution when handling high-pressure service equipment. We recommend that this work be performed by a Polaris dealer.

Front Springs

The front springs can be changed if spring preload alone isn't sufficient and further adjustment is desired to control suspension stiffness. See your Polaris dealer for more information.

THE PERFECT FIT
IQ Rear Suspension Adjustments

Rider weight, riding style, trail conditions, and vehicle speed all affect suspension action.

Each rear suspension can be adjusted to suit rider preference and deliver excellent performance for a given set of conditions. However, all suspension designs and adjustments involve a compromise, or trade-off. For example, a suspension set up for snow-cross racing would provide a very stiff ride on the trail. A suspension set up for trail riding would bottom out harshly on a snow-cross course.

A decal outlining rear suspension set-up options is located either under the hood or on the clutch cover. It provides a guideline for initial suspension set-up. Additional adjustments can be made from this point. Make adjustments to one area at a time so you can evaluate the change. For further assistance, see your dealer.

Suspension Performance Tips

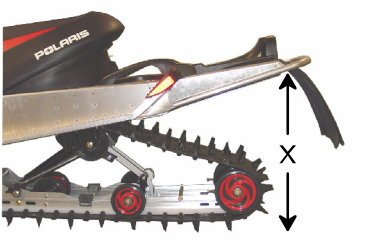
- Rider weight usually determines the position at which the spring pre-load should be set. However, this may vary with riding style. With a little experimentation, each rider can find a preferred set-up. These adjustments are easy to make, involve very little time or effort, and greatly affect the ride.
- In deep snow, a new slider will offer improved performance over worn slider. It can also improve top speed.
- Polaris offers track kits for improved flotation in deep snow. See your dealer for assistance.

NOTE: Keep the suspension pivot points lubricated. This will reduce moisture and rust build-up and ensure proper function of the suspension components. Grease rear suspension pivots before adjusting the rear suspension. Refer to Suspension Maintenance beginning on page 107.

IQ Rear Suspension Adjustments

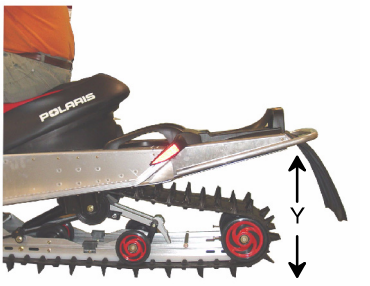
Rear Suspension Initial Spring Preload Setting (Sag Method)

To set up the rear suspension torsion spring preload, measure the distance between the ground and rear bumper. This is measurement X.



Take this measurement with no rider and with the rear suspension at full extension.

NOTE: The rear bumper may need to be lifted upward slightly to fully extend the suspension.



Next, have the rider drop down hard on the seat and bounce up and down several times, collapsing the rear suspension. With the rider seated, measure the distance between the ground and the rear bumper at the exact location used for measurement X. This is measurement Y.

To determine sag, commonly referred to as ride-in, subtract measurement Y from X (Sag=X-Y). Adjust sag by rotating the torsion spring preload cams located on the rear torque arm. Use the illustration or the decal found under the hood for reference. The ideal amount of sag for the IQ rear suspension is five inches (X-Y=5).

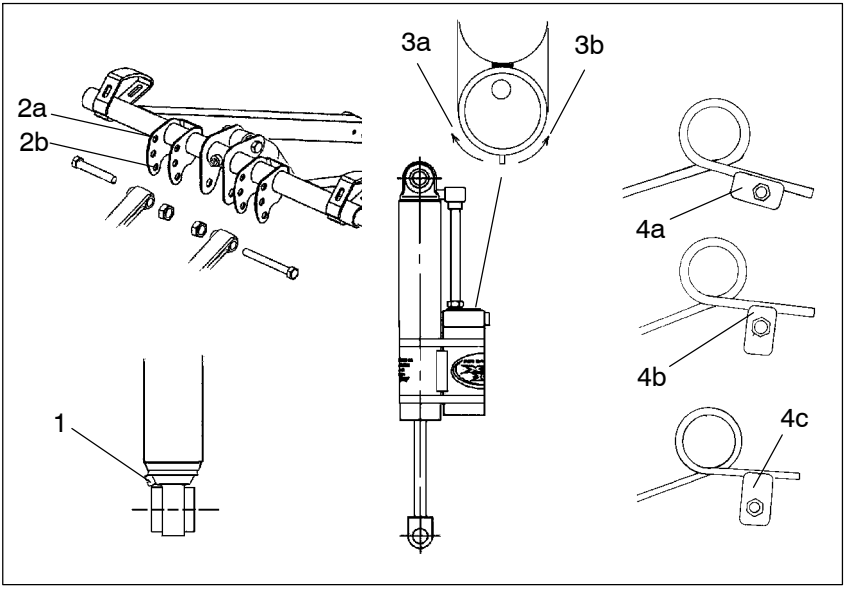
If the rear suspension rides in less than four inches or more than six inches with the torsion spring preload cams at their maximum range of adjustment, optional torsion springs (softer or stiffer, respectively) may be required. This is only an initial setup, and final spring preload may vary based on rider preference and riding conditions.

THE PERFECT FIT
IQ Rear Suspension Adjustments
Rear Torsion Spring Tension

To adjust rear torsion spring tension, rotate the three-position cam using the engine spark plug tool.

Different rate torsion springs are available if a firmer ride is desired. Contact your dealer for more information.

The following information is provided only as a guideline to be used for initial suspension set-up. Your set-up may vary based on your desired riding style.



1 - Turn screw clockwise to stiffen compression (Standard)
2a - Limiter strap in high position increases ski pressure
2b - Limiter strap in low position decreases ski pressure
3a - Turn the knob to the left for a softer ride (Premium)
3b - Turn the knob to the right for a stiffer ride (Premium)
4a - **Soft Tension** - long end of cam to front
4b - **Medium tension** - short end of cam up
4c - **Firm tension** - long end of cam up

IQ Rear Suspension Adjustments

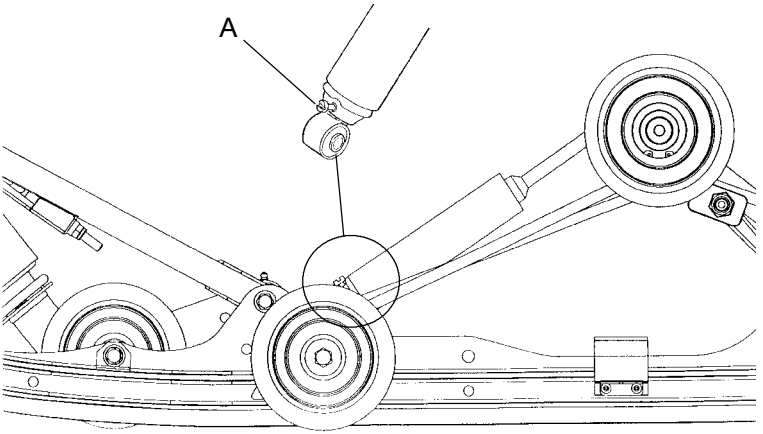
Rear Shocks

Indy Select Rear Shock

Some snowmobiles are equipped with the Indy Select rear shock, which allows for adjustments to the compression valving by turning the adjustment screw located near the base of the shock.

Locate the adjustment screw (A) near the base of the shock. In half-turn increments, turn the screw clockwise to increase compression valving and stiffen the ride, or counterclockwise to reduce compression and soften the ride. There are approximately three full turns of adjustment available.

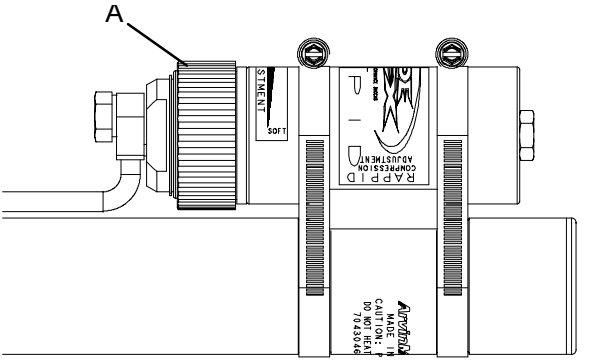
If bottoming continues after the screw has been turned fully clockwise, the torsion spring should be adjusted (see page 48). Return the screw to its original starting position after the torsion spring has been adjusted.



THE PERFECT FIT
IQ Rear Suspension Adjustments
Rear Shocks
ARVIN Rapid Adjust Shock

The ARVIN Rapid Adjust shock is available as an option on some models. Turn the Rapid Adjust knob (A) on the shock reservoir to make adjustments to the compression damping.

Positions are labeled on the shock. When adjusting, we recommend that you turn the adjuster slightly, then test ride.



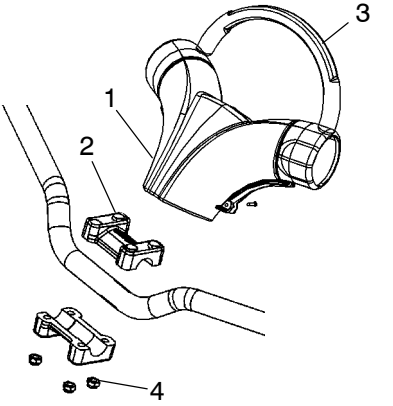
Handlebar Adjustments

Handlebar Position

Use the RIDER SELECT feature to adjust handlebar position. See page 29.

Handlebar Angle

Follow these steps to adjust handlebar angle at the handlebar block.



1. Remove the handlebar cover (1) to expose the handlebar and the four adjuster block bolts (2).

NOTE: If necessary, remove the mountain bar (3).

2. Using a 7/16″ (11 mm) wrench, loosen the four nuts (3) on the bottom of the adjuster block (turn handlebar to left or right for access to back nuts).

NOTE: If necessary, pry the blocks apart with a screwdriver.

3. Adjust the handlebar to the desired height. Be sure handlebars, brake lever and throttle lever operate smoothly and do not hit the gas tank, windshield or any other part of the machine when turned fully to the left or right.
4. Torque the handlebar adjuster block bolts to 11-13 ft. lbs. (15-18 Nm).

NOTE: Torque the front bolts first.

5. Reinstall the handlebar cover.

THE PERFECT FIT
Accessories

Polaris offers a wide range of accessories for your snowmobile to help make each ride more enjoyable.

NOTE: The accessory tether switch is available for all models. Order PN 2870668.

Use only Polaris parts and accessories on your Polaris snowmobile. Use of unapproved parts and accessories may result in:

- Non-compliance with government/industry requirements
- Voiding of warranty
- Injury to self or others

This applies, but is not limited to the following areas: brakes, clutches, fuel systems, and exhaust systems.

NOTE: Exhaust systems are critical safety areas that *must* use approved Polaris parts. Please see your Polaris dealer for service.

Traction Products (SwitchBack only)

Studs

Before equipping your machine with traction products, be aware of the laws in your area pertaining to the use of traction products.

Use only Polaris traction products on your snowmobile. Track warranties are void if track damage or failure results from improper or excessive stud installation or the use of non-Polaris traction products.

See your dealer about installing studs and/or carbides.

CAUTION

Always install wear strips before installing studs. Failure to install wear strips may result in cooler or tunnel damage. See page 54.

Never add shims to the wear strip. Track damage will result because of lack of clearance between upper carrier wheels and track.

Use of studs longer than the recommended length on machines equipped with center coolers will result in center cooler damage or damage to the tunnel.

Track studding will enhance braking control on hard-packed snow or ice, but extreme caution is still required on such surfaces. Steering ability may be reduced on hard-packed snow or ice.

When studded tracks are used, increased wear to the brake pads will result from increased braking. Extended-wear brake pad kits are available. See your dealer.

CAUTION

Aggressive studding patterns may require grinding protruding stud bolts flush to prevent idler wheel damage. Maintain track tension on studded tracks on the tight side of the spec to prevent heat exchanger damage. Center of stud must be at least 1 1/8″ (2.86 cm) from outside edge of the track.

THE PERFECT FIT
Traction Products (SwitchBack only)

Carbide Skags

A skag is a replaceable bar attached to the underside of the ski to assist in turning the snowmobile and to prevent ski wear caused by contact with roads and other bare terrain. Use carbide skags with studded tracks to help maintain proper vehicle steering and control. See page 106.

If your machine has carbide skags, it may be necessary to add track studs to maintain proper vehicle control. Maintain a proper balance between the number of studs and the length of carbide on the skags (the more studs you use, the longer the carbide on the skags should be). See your dealer's track studding chart.

Wear Strips

To avoid excessive tunnel wear, tunnel wear strips *must* be installed whenever track studding is used. Install Wear Strip Kit P/N 2875415.

Wear strips are designed for a specific stud length. See your dealer's studding chart for recommended traction accessories.

CAUTION

Whenever wear strips are relocated, be sure there's adequate stud clearance to the heat exchangers. Lack of clearance may result in damage to heat exchangers.

Pre-Ride Checklist

Inspect all items on the checklist for proper operation or condition before each use of the snowmobile. Procedures are outlined on the referenced pages. Look for a checkmark (✓) on the referenced pages to locate the pre-ride inspection items.

Item	See Page
Drive Belt Condition	96, 98
Steering System	59
Recoil Rope	56
Coolant Level	87
Park Brake Lock/Brake Lever/Brake System	57, 58, 90
Auxiliary Shut-Off Switch (Engine Stop Switch)	60
Ignition Switch	60
Taillight/Brakelight/Headlight	60
Suspension Mounting Bolts	108
Skags (Wear Bars)	54, 106
Ski Saddle and Spindle Bolts	107
Hood Straps/Latches	59
Seat Latches	56
Throttle Lever/Safety Switch	56, 69, 70
Rear Wheel Idler Bolts	102, 107
Tether Switch/Strap	60
Track Alignment/Condition	59, 103
Slider Condition	107
Chaincase Oil Level	81
Injection Oil Level	68

PRE-RIDE INSPECTIONS
Before Starting the Engine

⚠ WARNING

Worn, damaged, or malfunctioning components may cause serious injury or death. Before starting the engine, check all components to be sure of proper operation.

Read and Understand Your Owner's Manual

Read the Owner's Manual completely and refer to it often. The manual is your guide to safe and enjoyable snowmobiling experience.

Throttle Lever

The throttle and brake are the primary controls of your snowmobile. Always make sure both are functioning properly.

Squeeze the throttle lever to make sure it compresses evenly and smoothly. When released, the lever should immediately return to the idle position without binding or hesitation. If the throttle does not function smoothly, or if you discover excessive lever freeplay, DO NOT start the engine. Have the throttle serviced immediately.

Throttle Safety Switch

Test the throttle safety switch system before the machine is operated. See page 69 for procedure.

Check Seat Latches

Ensure that the seat latches are securely in place before every use of the snowmobile.

Hood Latches

The hood of the snowmobile protects the operator from moving parts as well as aiding in sound emission control and other functions. *Under no circumstances* should your snowmobile be operated with the hood open or removed. Always ensure that the hood straps are in good condition and that the latches are securely in place before operating the snowmobile.

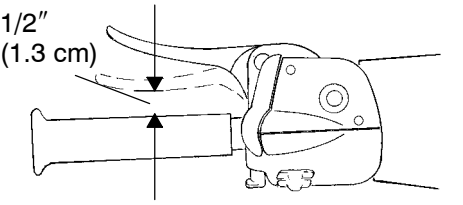
Recoil Rope

Inspect the recoil rope and handle for excessive wear, and make sure the knot securing the rope inside the handle is secure. If excessive wear is found, see your Polaris dealer for replacement.

Before Starting the Engine

Brakes

Always check the following items for proper operation before starting the engine.



Brake Lever Travel

Squeeze the brake lever. It should move no closer to the handgrip than 1/2″ (1.3 cm). A smaller distance indicates low brake fluid level or air in the hydraulic system. Refer to the brake bleeding information on page 93.

Lever Feel

If the brake lever feels “spongy” when squeezed, check the brake fluid level and condition. Add fluid as needed. See page 92.

Check for the presence of air in the fluid system. See page 93 for more information, or see your dealer for service.

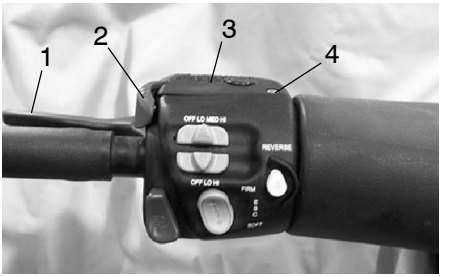
⚠ WARNING

Continued use of “spongy” brakes may cause a complete loss of brakes, which could result in serious injury or death. Always have the brakes serviced at the first sign of sponginess.

PRE-RIDE INSPECTIONS
Before Starting the Engine
Park Brake Lever Lock

Use the park brake lever lock only when you want the machine to remain stationary; for example, when parked on an incline for a period of five minutes or less.

1. Brake Lever
2. Park Brake Lever Lock
3. Master Cylinder Reservoir / Cover
4. Fluid Level Indicator



Lock Engagement

To engage the lock, squeeze the brake lever tightly and push forward on the lock. Hold the lock forward while releasing the brake lever.

NOTE: If the brake lever is squeezed tightly enough, the lock will move freely into place. Do not force the lock or it may break.

The park brake light on the gauge, will light up if the park brake lever lock is set while the engine is running. It will also be lit when the service brake is in use. If the park brake light does not come on when the park brake or service brake is in use, have it serviced by your dealer.

Lock Release

To release the lock, squeeze the brake lever tightly. The lock will return to the unlock position.

⚠ WARNING

If the park brake lever lock is partially or entirely engaged while riding, the brakes may overheat, resulting in brake damage. In extreme cases it could cause a fire, which could result in serious injury or death. Always ensure that the lever lock is completely disengaged before operating the snowmobile.

Recoil Rope

Inspect the recoil rope and handle for excessive wear, and make sure the knot securing the rope inside the handle is secure. If excessive wear is found, see your Polaris dealer for replacement.

Before Starting the Engine

Hood Latches

The hood of the snowmobile protects the operator from moving parts as well as aiding in sound emission control and other functions. *Under no circumstances* should your snowmobile be operated with the hood open or removed. Always ensure that the hood straps are in good condition and that the latches are securely in place before operating the snowmobile.

Steering System

Manually turn the skis completely to the right and to the left. If any difficulty is encountered, remove any ice and snow build-up that may be obstructing the steering linkage.

Track

⚠ WARNING

Operating the snowmobile with a damaged track increases the possibility of track failure, which could cause loss of control resulting in serious injury or death. Always inspect the track for damage before using the vehicle.

Use of traction products such as studs increases the possibility of track damage and/or failure. Driving at high speeds for extended periods of time in marginal lubrication could severely damage track rods, break track edges and cause other track damage. Examples of marginal lubrication would include frozen bodies of water without snow cover, icy trails, and no-snow conditions.

NOTE: Track damage or failure caused by operation on ice or poor lubrication conditions voids the track warranty.

Deep Lug Tracks (if equipped)

The 2.4” powder track is designed specifically for deep snow applications. Operation in low snow conditions at high speeds may cause track lug separation. Track lug separation is not covered under the Polaris limited warranty policy. **Polaris does not recommend operation above 70 mph with this track.**

CAUTION

High speed use on hardpacked surfaces is not recommended for models equipped with a deep lug track. Track lug damage may occur. Keep high speed use to a minimum, including frequent slow-speed intervals for track cooling.

PRE-RIDE INSPECTIONS
Start the Engine and Check

- **Engine Stop Switch:** Check the auxiliary shut-off switch for proper operation. Push the switch down to stop the engine. Pull it up to allow restarting.
- **Ignition Switch:** Make sure the engine stops when the ignition switch is turned to *OFF*.
- **Tether Switch:** If your machine has a tether switch, remove the tether from the switch to make sure the engine stops immediately.
- **Lighting:** Check the headlight (high and low beam), taillight, and brake light. Replace burned out lamps before operating.
- **Mirror Adjustment:** If equipped, adjust your mirrors so they can be used to their full advantage.
- **Operating Area:** Before driving away, check your surroundings. Be aware of obstacles and make sure bystanders are a safe distance from the machine.

Starting the Engine

⚠ WARNING

Before starting the engine, always refer to all safety warnings pertaining to snowmobile operation. Never start your snowmobile without checking all components to be sure of proper operation. See *Check Before Starting the Engine* beginning on page 56.

Do not depress the throttle until the engine starts.

1. Turn the key to the *ON* position.
2. Pull the engine stop switch up to the *RUN* position.
3. Grasp the recoil rope handle and pull slowly until the recoil engages; then pull abruptly.
4. Repeat as needed until the engine starts.

NOTE: It may require as many as eight to ten pulls to prime the fuel system and start the engine if the fuel tank has been completely emptied.

⚠ CAUTION

Don't pull the starter rope to the fully extended position and don't allow it to snap back into the housing. Damage may result.

To avoid injury and/or engine damage, do not operate the electric starter or pull-rope starter while the engine is running.

OPERATION
Engine Break-In

No single action on your part is as important to long, trouble-free machine life as proper break-in of a new or rebuilt engine. Premix the first tank of gasoline with one pint of Polaris injection oil for each five gallons of fuel. This, in addition to the lubrication supplied by the injection system, will assure proper engine break-in.

CAUTION

Excessive heat build-up during the first three hours of operation will damage close-fitted engine parts. Do not operate at full throttle or high speeds for extended periods during the first three hours of use. Vary the throttle openings and machine speeds to reduce friction on all close-fitting machined parts, allowing them to break in slowly without damage.

Use of any lubricants other than those recommended by Polaris may cause serious engine damage. We recommend the use of Polaris lubricants for your vehicle.

Drive with extra caution during the break-in period. Perform regular checks on fluid levels, lines, and all other important areas of the machine.

Engine Break-In

Oil Injection System

Always fill the oil reservoir when refueling.

CAUTION

Serious engine damage can occur without the proper lubrication. Check the oil tank level often during the first tank of fuel. If the oil level doesn't go down, contact your dealer immediately.

Variable Exhaust System

All snowmobile engines equipped with variable exhaust valves should use VES II 2 Cycle Oil (see chart below).

Oil Recommendations

Engine lubrication comes from oil added to the fuel and oil injection systems. We highly recommend the use of only Polaris products. Polaris lubricants provide the best protection for your Polaris engine.

Never mix brands of oil. Serious chemical reactions can cause injection system blockage, resulting in serious engine damage. Oils may also be incompatible and the result could be sludge formation, filter blockage, and reduced cold weather flow rates. All Polaris oils are compatible with each other.

Engine Style	Premium 2-Cycle	Premium Gold 2-Cycle	VES II 2-Cycle
Liquid Cooled w/VES	Good	Better	Best

OPERATION
Track Warm-Up
⚠ WARNING

A loose track or flying debris could cause serious injury or death. Stand clear of the front of the machine and the moving track. Never hold the snowmobile up or stand behind it while warming up the track. Do not use excessive throttle during warm-up or when the track is free-hanging. Be sure the rear support is stable.

⚠ WARNING

Use of traction products such as studs, ice growsers, etc. will increase the possibility of track damage and/or failure. This could cause loss of control, resulting in serious injury or death. Always inspect for track damage before operating the snowmobile.

Follow these steps to ensure proper warm-up of the engine, drive train and track.

1. Use an appropriate stand to securely support the rear of the snowmobile at the rear bumper. The track should be approximately 4″ (10 cm) off the ground.
2. Start the engine and allow it to warm up two to three minutes.
3. Depress the throttle abruptly and allow the track to rotate several revolutions.

NOTE: It will take longer to warm up the track sufficiently during colder outdoor temperatures.

4. Release the throttle, apply the brakes, shut off the engine and lower the machine to the ground.
5. Grasp the skis by their front loops and move them from side to side to loosen snow and ice.

Slide Rail and Track Cooling

CAUTION

Inadequate cooling and lubrication will lead to overheating of the slide rail and track, resulting in premature wear and failure. Reduce speeds and frequently drive into fresh snow to allow adequate cooling and polishing of the slide rail and track surfaces. Avoid operating on ice, hard-packed surfaces or roads.

CAUTION

High speed use on hardpacked surfaces is not recommended for models equipped with a deep lug track. Track lug damage may occur. Keep high speed use to a minimum, including frequent slow-speed intervals for track cooling.

OPERATION
Fuel

⚠ WARNING

Gasoline is highly flammable and explosive under certain conditions.

- Always exercise extreme caution whenever handling gasoline.
- Always refuel outdoors or in a well-ventilated area.
- Always turn off the engine before refueling.
- Do not overfill the tank. Do not fill the tank neck.
- Do not smoke or allow open flames or sparks in or near the area where refueling is performed or where gasoline is stored.
- If gasoline spills on your skin or clothing, immediately wash it off with soap and water and change clothing.
- Never start the engine or let it run in an enclosed area. Engine exhaust fumes are poisonous and can cause loss of consciousness or death in a short time.

⚠ WARNING

The engine exhaust from this product contains chemicals known to cause cancer, birth defects or other reproductive harm. Operate this vehicle only outdoors or in well-ventilated areas.

Fuel

For peak performance, Polaris recommends the use of 91 octane or higher fuel. Although 87 octane fuel is usable, some engine performance will be lost and fuel economy will decrease. Do not use fuel lower than 87 octane.

CAUTION

Operating with obstructed fuel systems will result in serious engine damage. Perform maintenance as recommended.

Damage to the fuel pump will occur if the snowmobile is operated with an empty fuel tank. Do not allow the snowmobile to run out of fuel. Always refuel when the level is low.

Prolonged exposure to petroleum based products may damage paint. Always protect painted surfaces when handling fuel.

Fuel Level

The fuel symbol and the last fuel bar on the MFD gauge will blink when the fuel level reaches 1/8th tank. There will be approximately one gallon of fuel remaining. Refuel as soon as possible. *Do not allow the snowmobile to run out of fuel.*

Fuel System Deicers

If you use non-oxygenated fuel, Polaris recommends the regular use of isopropyl-based fuel system deicer. Add one to two ounces per gallon (8-16 milliliters per liter) of gasoline to prevent engine damage resulting from fuel system icing and lean fuel mixtures. *Never use deicers or additives containing methanol.* Polaris also recommends the use of Carbon Clean Plus. See page 111 for the part numbers of Polaris products.

If you use oxygenated fuel containing ethanol, additional alcohol deicers or water absorbing additives should not be used.

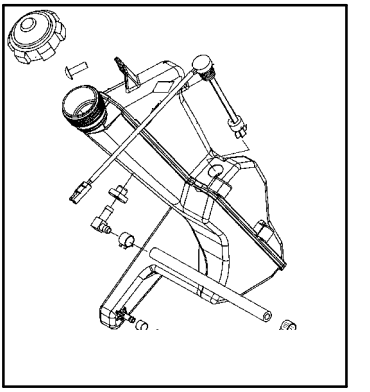
OPERATION
Oil

Low Oil Indicator Light

The low oil indicator light will alert the operator if the oil level is low. Visually check the oil level in the bottle. Add oil before further operation of the snowmobile. See page 63 for oil recommendations.

Low Oil Level

Always maintain the oil level above the tank's low level line. This is especially important when the machine is operated in mountainous terrain. Maintaining the proper oil level will prevent system aeration and possible loss of pumping action, which could result in engine damage.



If necessary, the engine may be operated as long as oil is visible in the oil tank. If oil is not visible, continued operation may cause serious engine damage. See page 63 for oil recommendations.

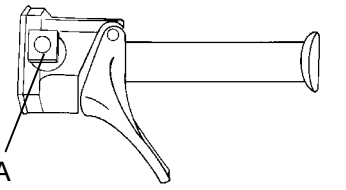
CAUTION

Operating the snowmobile without adequate engine lubrication can result in serious engine damage. Always check the oil level when refueling. Add oil as needed to maintain the level above the low level mark.

The Polaris oil cap on the oil bottle is vented to allow proper oil flow. See your Polaris dealer for recommended replacement parts.

Engine Stop Switch

Push down on the engine stop switch (A) to ground out the ignition and stop the engine quickly. Pull the switch up to the *ON* position to allow restarting.



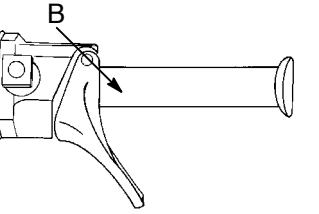
Throttle Safety Switch

The throttle safety switch is designed to stop the engine whenever all pressure is removed from the throttle lever and the throttle cable or valves do not return to the normal closed position.

⚠ WARNING

Operating the snowmobile with a faulty throttle safety switch can result in serious injury or death in the event of an accident. If the throttle safety switch does not shut off the engine during a throttle system malfunction, immediately push down the engine stop switch. Do not start the engine again until the malfunction has been corrected by your dealer.

Test the throttle safety switch system daily before operation.



1. Sit on the seat.
2. Start the engine and allow it to idle.
3. Hold the throttle lever pin stationary by exerting pressure on the pivot pin in the direction shown in the illustration (B).
4. Apply a slight amount of throttle. A properly functioning switch *must* shut down the engine.

OPERATION
Throttle Lever

⚠ WARNING

An improperly functioning throttle lever may cause erratic machine behavior and loss of control, which could result in serious injury or death. If the throttle lever does not work properly, DO NOT start the engine.

If the engine stops abruptly when the throttle lever is released:

1. Turn the ignition switch to *OFF*.
2. Visually inspect the throttle cable and throttle body to determine what caused the safety switch to activate.
3. Test the throttle lever by compressing and releasing it several times. The lever and cable must return to the idle position quickly and completely.
4. If the throttle lever operates properly, turn the ignition switch on and go through normal starting procedures.
5. If the engine doesn't start, take the snowmobile to an authorized Polaris dealer for service.

Excessive freeplay in the throttle cable may cause the safety switch to activate, preventing the engine from starting. If this occurs, return the machine to an authorized Polaris dealer for service.

If an emergency exists and it's necessary to start the engine, the throttle safety switch and engine stop switch may be disconnected from the wire harness. When these switches are disconnected, the ignition key switch must be used to shut off the engine. DO NOT continue to operate the machine with the throttle safety switch disconnected. Return the machine to an authorized Polaris dealer for service as soon as possible.

Emergency Stopping

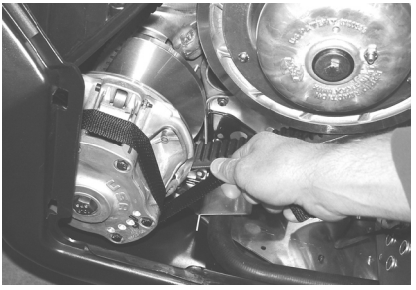
The following chart lists methods for stopping the snowmobile in the event of an emergency. See page 69 for more information about the engine stop switch and throttle safety switch.

SYSTEM	WHAT IT DOES	THROTTLE CONDITION
Ignition Switch	Interrupts ignition circuit	All
Brake	Slows jackshaft	All
Engine Stop Switch	Interrupts ignition circuit	All
Throttle Safety Switch	Interrupts ignition circuit	All
Tether Switch (Option)	Interrupts ignition circuit	All

Emergency Starting

If the recoil starter system fails, an emergency start strap is provided in the tool kit.

1. Open the hood.
2. Remove the left side panel.
3. Remove the air box (pull aggressively).
4. Using the belt removal tool, follow the directions on the air box to relieve belt tension.
5. Starting at one of the tower struts, wind the strap counterclockwise around the clutch as shown.



⚠ WARNING

Serious injury can result from wrapping the start strap around your hand while using the emergency starting procedure. DO NOT wrap the start strap around your hand. Keep all bystanders and loose clothing away from the snowmobile when using the emergency starting procedure.

6. Pull the strap abruptly so the strap comes free of the clutch while starting the engine. Repeat until the engine starts.
7. Reinstall the air box and side panel.
8. Close and secure the hood.

OPERATION
Electronic Reverse (PERC™)

Electronic reverse will activate only if the engine RPM is below 4000.

⚠ WARNING

Improper reverse operation, even at low speeds, may cause loss of control, resulting in serious injury or death. Damage will occur to the chaincase or transmission if shifting is attempted when the engine is operating above idle speed.

- Shift to or from reverse only when the snowmobile is stopped and when engine speed is at idle.
- Look behind the vehicle before and while backing.
- Avoid sharp turns.
- Apply throttle slowly.

Engaging Reverse

1. Stop the snowmobile and leave the engine idling.
2. Make sure the area behind your vehicle is clear.
3. Push the yellow reverse button on the left-hand control for one second, then release. The engine will automatically reduce RPM and start a reverse rotation. A flashing reverse light on the instrument panel will indicate that the machine is in reverse.
4. Apply the throttle slowly to make sure the machine is in reverse.

NOTE: The maximum engine RPM will be 6000 when in reverse.

NOTE: If the engine stops running, the snowmobile will be in forward gear when it's restarted.

Disengaging Reverse

1. Stop the snowmobile and leave the engine idling.
2. Push the yellow reverse button for one second and release. The engine will slow and and begin to rotate forward. The light on the instrument panel will shut off.
3. Apply the throttle slowly to make sure the machine is in forward.

Daily Storage

At the end of each ride, park the snowmobile on a level surface and support it at the rear with an appropriate track stand. The track should be suspended approximately 4″ (10 cm) off the ground.

Remove the key and cover the machine.

Towing

⚠ WARNING

Objects towed with a rope have no braking power and can easily collide with the rear of the snowmobile or other objects, resulting in serious injury or death. DO NOT tow toboggans, sleds, saucers, or any type of vehicle with a rope. Only a stiff metal pole connecting the towed object and the tow hitch on the snowmobile should be used. If passengers are to be towed on a toboggan or sled, make sure the pole is at least four feet (1.2 meters) long to prevent any possibility of contact between the snowmobile's track and a person riding in the towed object.

Braking distances increase when towing loads. Slow down to maintain control of the snowmobile.

If the snowmobile becomes inoperable and must be towed, and if it isn't possible to use a rigid tow bar, attach the tow rope to the ski spindles (not to the ski loops) to prevent damage to the steering components. Remove the drive belt before towing, and have someone ride on the towed snowmobile to operate the brake and steering when necessary.

CAUTION

Towing a disabled snowmobile with the drive belt in place can result in serious damage to the engine and drive system. Always remove the drive belt from a disabled snowmobile before towing.

MAINTENANCE
Polaris Recommended Maintenance Program

To ensure many trouble-free miles of snowmobiling enjoyment, follow recommended regular maintenance and perform service checks as outlined in this manual.

The recommended maintenance schedule on your snowmobile calls for service and maintenance inspections at 150 miles (240 km), 500 miles (800 km) and 1000 miles (1600 km). These inspections should be performed by a qualified service technician. For continued optimum performance and component life, continue maintenance checks at 1000 mile (1600 km) intervals.

All necessary replacement parts and labor incurred, with the exception of authorized warranty repairs, become the responsibility of the registered owner. If, during the course of the warranty period, part failures occur as a result of owner neglect in performing recommended regular maintenance, the cost of repairs are the responsibility of the owner.

Personal safety is critical when attempting to service or make adjustments to your snowmobile. If you're not familiar with safe service or adjustment procedures and the use of tools, or if you don't feel comfortable performing these tasks yourself, contact an authorized Polaris dealer for service.

Periodic Maintenance Interval Table

The following chart is a guide based on average riding conditions. You may need to increase frequency based on riding conditions. When inspection reveals the need for replacement parts, always use genuine Polaris parts, available from your Polaris dealer.

Item	See Page	Frequency				
		150 mi. (240 km)	500 mi. (800 km)	1000 mi. (1600 km)	2000 mi. (3200 km)	Pre-Season
Clutch						
Clutch Offset Alignment (without belt)	95		I	I	I	
Drive Belt Condition	96		I	I	I	I
Clutches (disassemble)	95		C	C	C	
Belt Tension	-		I	I	I	I
Clutch Sheaves	95		I	I	I	I
Engine						
Engine Mounts	-		I	I	I	I
Recoil Rope	-		I	I	I	I
Engine Mounting Plate	-		I	I	I	
Engine Torque Stop	98		I	I	I	I
Cylinder Head Bolts	-		I	I	I	
Cylinder Base Nuts	-	I	I	I	I	
Ignition Timing BTDC	-		I	I	I	
VES System	-		C	C	C	I
Coolant Level	87		I	I	R	I
Water Pump Drive Belt	-		I	I	I	
Coolant Hose	-		I	I	I	I
Heat Exchangers	-	I	I	I	I	I
Coolant Circulation	-		I	I	I	
Coolant Leaks	-		I	I	I	I
Spark Plug Condition	83	I	I	I	I	I
Exhaust Pipe	86				I	I
Exhaust Retaining Springs	86		I	I	I	I

I - Inspect (clean, adjust, tighten, lubricate, replace if necessary)
C - Clean **R** - Replace **L** - Lubricate

MAINTENANCE
Periodic Maintenance Interval Table

Item	See Page	Frequency				
		150 mi. (240 km)	500 mi. (800 km)	1000 mi. (1600 km)	2000 mi. (3200 km)	Pre-Season
Brakes						
Hose Routing	-		I	I	I	I
Hose Condition	-		I	I	I	I
Fluid Leaks	-		I	I	I	I
Brake Pads	90		I	I	I	I
Brake Disc	-		I	I	I	I
Parking Brakes	58		I	I	I	I
Brake System	56, 90					I
Brake fluid	92				R	
Fuel Management						
Idle RPM	-		I	I	I	
Throttle Lever	56, 70	I	I	I	I	I
Oil Pump Lever (synchronize)	-		I	I	I	
Throttle Cable	80		L	L	L	
Vent Lines	-		I	I	I	I
Throttle Position Sensor	-		I	I	I	
Fuel Filter	-			R	R	
Fuel Lines	-	I	I	I	I	I
Oil Filter	85			R	R	
Oil Lines	85			I	I	I
Air Box/Plenum	-	I	I	I	I	I
Fuel injectors			I	I	I	
Electrical						
Auxiliary Shut-Off Switch	60	I	I	I	I	I
Throttle Safety Switch	56, 69	I	I	I	I	I
Ignition Switch	-	I	I	I	I	I
Taillight	60	I	I	I	I	I
Brakelight	60	I	I	I	I	I
Headlight	60	I	I	I	I	I

Periodic Maintenance Interval Table

Item	See Page	Frequency				
		150 mi. (240 km)	500 mi. (800 km)	1000 mi. (1600 km)	2000 mi. (3200 km)	Pre-Season
CHASSIS						
Ski Toe Alignment	-		I	I	I	
Suspension Mounting Bolts	-	I	I	I	I	I
Steering Fasteners	-	I	I	I	I	C
Rear Suspension Fasteners	-	I	I	I	I	I
Suspension Shock Oil	-		I	I	I	I
Cooling Fins and Shroud	-		I	I	I	I
Drive Shaft Bearings	107		L	L	L	I
Jackshaft Bearings	109		L	L	L	I
Skags (Wear Bars)	-	I	I	I	I	I
Ski Saddle/Spindle Bolts	-	I	I	I	I	I
Drive Chain Tension	87	I	I	I	I	I
Hood Straps	59	I	I	I	I	I
Rear Wheel Idler Bolts	102	I	I	I	I	I
Idler Bolt Jam Nut	102	I	I	I	I	I
Rear Suspension Pivot Shafts	80		L	L		L
Camber Alignment	-		I	I	I	
Handlebar Centering	-					I
Tether Switch and Strap	60	I	I	I	I	I
Track Alignment	103	I	I	I	I	I
Track Tension	101	I	I	I	I	I
Front Limiter Strap	-	I	I	I	I	I
Slider Condition	107					I
Chaincase Oil	81	I	I	I	R	I

I - Inspect (clean, adjust, tighten, lubricate, replace if necessary)
C - Clean **R** - Replace **L** - Lubricate

MAINTENANCE
Maintenance Log

Present this section of your manual to your dealer each time your snowmobile is serviced. This will provide you and future owners with an accurate log of maintenance and services performed on the snowmobile.

150 Mile (240 km) Initial Maintenance Inspection

Authorized Polaris Servicing Dealer_____

Servicing Technician_____

Date_____ Mileage_____

500 Mile (800 km) Maintenance Inspection

Authorized Polaris Servicing Dealer_____

Servicing Technician_____

Date_____ Mileage_____

1000 Mile (1600 km) Maintenance Inspection

Authorized Polaris Servicing Dealer_____

Servicing Technician_____

Date_____ Mileage_____

2000 Mile (3200 km) Maintenance Inspection

Authorized Polaris Servicing Dealer_____

Servicing Technician_____

Date_____ Mileage_____

Maintenance Log

Additional Services Performed

Authorized Polaris Servicing Dealer_____

Servicing Technician_____

Date_____ Mileage_____

Type of Service_____

Additional Services Performed

Authorized Polaris Servicing Dealer_____

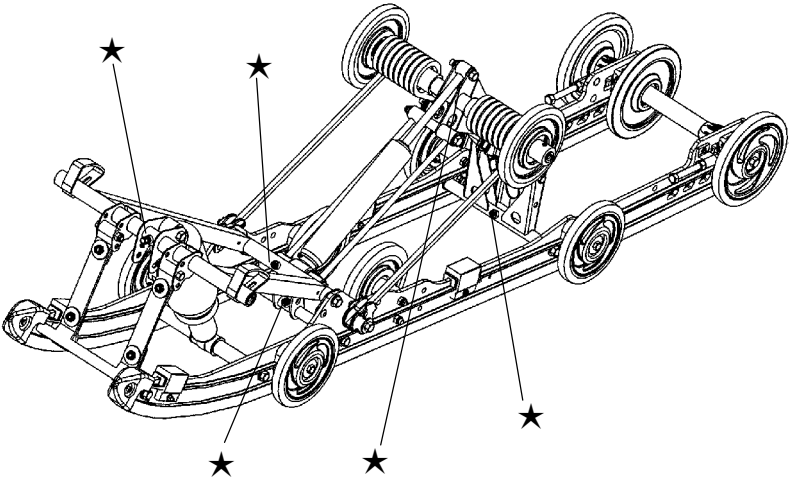
Servicing Technician_____

Date_____ Mileage_____

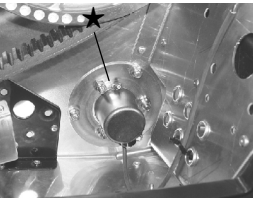
Type of Service_____

MAINTENANCE
Lubrication
Front Suspension
The Fusion front suspension and steering components do not require lubrication.

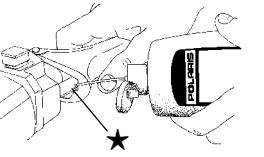
Rear Suspension
Lubricate the suspension pivot shafts with Polaris Premium All Season Grease at 500 miles (800 km) initially, every 1000 miles (1600 km) after that, and before off-season storage each year. Lack of lubrication will adversely affect your ride and the life of the suspension. For more information about suspension lubrication and adjustments, see your Polaris dealer.



Driveshaft Bearing
Inject grease into the fitting on the speedometer sensor housing until grease purges from the seal on the inside of the tunnel. This should take approximately two pumps. Do not use more than four pumps.



Throttle Cable
Lubricate the throttle cable lightly with grease or oil. With the engine off, turn the handlebars to the left and lubricate liberally as shown.



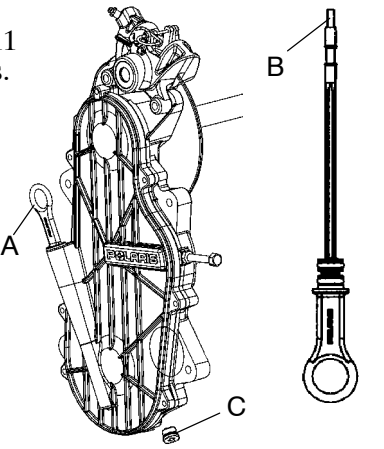
Lubrication

Chaincase Oil

Check the chaincase oil level at the intervals outlined in the maintenance charts beginning on page 75. Maintain the oil level between the safe marks on the dipstick (A). Change the chaincase oil after the first 500 miles (800 km), then every 1000 miles (1600 km) or seasonally.

NOTE: Clean the magnetic plug (B) whenever checking or changing lubricant.

Polaris recommends the use of Polaris Synthetic Chaincase Lube. See page 111 for the part numbers of Polaris products.



Oil Check

1. Position the machine on a level surface.
2. Remove the dipstick and wipe it clean with a dry cloth.
3. Reinstall the dipstick, then remove it and read the oil level.
4. Add the recommended oil as needed. *Do not overfill.*
5. Reinstall the dipstick, making sure it is seated properly.

Oil Change

1. Position the machine on a level surface.
2. Place a drain pan beneath the chaincase and remove the drain plug (C). Allow the oil to drain completely.
3. Install a new sealing washer on the drain plug.

NOTE: The sealing surfaces on the drain plug and the oil tank should be clean and free of burrs, nicks or scratches.

4. Reinstall the drain plug. Torque to 6-10 ft. lbs. (8-13 Nm).
5. Remove the dipstick and wipe it clean with a dry cloth.
6. Add 11 oz. (325 ml) of the recommended oil. *Do not overfill.*
7. Reinstall the dipstick, making sure it is seated properly.

MAINTENANCE
General Maintenance
Spark Plugs

A new engine can cause temporary spark plug fouling due to the preservative added during the assembly process. Avoid prolonged idle speeds, which cause plug fouling and carbonization.

Change the spark plugs every 2000-2500 miles (3200-4000 km).

CAUTION

Using non-recommended spark plugs can result in serious engine damage. A spark plug with a heat range too high will *always* cause engine damage if the engine is operated in conditions more severe than intended for that plug. Always use the spark plugs recommended for your snowmobile.

- Use recommended spark plugs with the proper gap.
- Use only resistor-type spark plugs.
- Torque spark plugs to 18-22 ft. lbs. (24-30 Nm).
- Always carry spare spark plugs.

General Maintenance

Spark Plugs

Spark plug condition is indicative of engine operation. The spark plug firing end condition should be read after the engine has been warmed up and the vehicle has been driven at higher speeds. Immediately check the spark plug for correct color.

⚠ WARNING

A hot exhaust system and engine can cause serious burns. Wear protective gloves when removing a spark plug for inspection.

1. Normal

The normal insulator tip is gray, tan or light brown. There will be few combustion deposits. The electrodes are not burned or eroded. This indicates the proper type and heat range for the engine and the service.

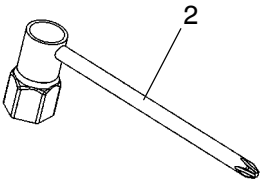
NOTE: The tip should not be white. A white insulator tip indicates overheating, caused by use of an improper spark plug or incorrect throttle body adjustments.

2. Wet Fouled

The wet fouled insulator tip is black. A damp oil film covers the firing end. There may be a carbon layer over the entire nose. Generally, the electrodes are not worn. General causes of fouling are excessive oil or use of non-recommended injection oil.

Spark Plug Removal and Replacement

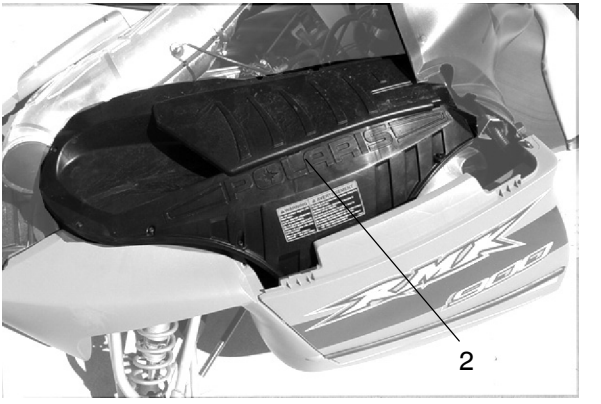
1. Remove the spark plug cap.
2. Using the special wrench provided in the tool pouch, rotate the spark plug counterclockwise to remove.
3. Reverse the procedure for spark plug installation.
4. Torque to 18-22 ft. lbs. (24-30 Nm).
5. Reinstall the spark plug cap.



MAINTENANCE
General Maintenance
Intake Filter

The intake foam filter limits snow ingestion into the intake system. When operating in loose powder snow, check the top of the foam filter periodically to remove any accumulation of snow.

1. Intake Foam Filters/Pre-filter
2. Plenum



General Maintenance

Fuel Injectors

All fuel injector service must be performed by an authorized Polaris dealer. Do not attempt to clean or service the fuel injectors.

Fuel Pump

All fuel pump service must be performed by an authorized Polaris dealer. Do not attempt to service the fuel pump.

Fuel Lines

Inspect the fuel lines regularly for signs of deterioration or damage. Always check fuel line condition after periods of storage. Normal deterioration from weather and fuel compounds may occur. Replace worn or damaged fuel lines promptly.

CAUTION

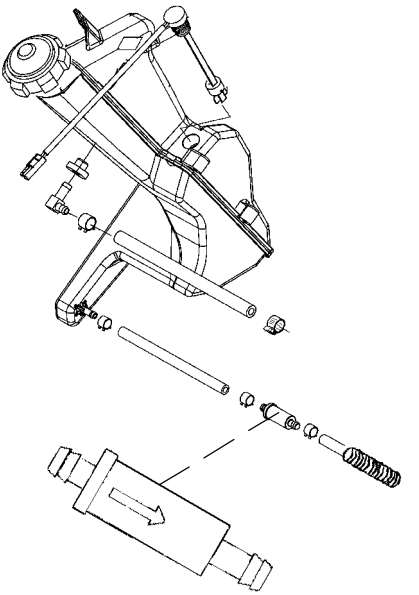
Kinking the fuel lines or using a pliers or similar tools to remove fuel lines may cause damage to the lines. If a fuel line has been damaged or kinked, replace it promptly.

Oil Filter

Inspect oil line condition at 1000 miles (1600 km). The oil filter should be changed annually or every 1000 miles (1600 km). The oil filter is located on the left side of the bulkhead behind the drive clutch.

Have your dealer perform the filter change and bleeding operation.

NOTE: The direction of the arrows indicates the direction of flow through the filter.



MAINTENANCE
General Maintenance
Exhaust System

Check the exhaust system for wear or damage at approximately 2000 miles (3200 km). To inspect, allow the engine and exhaust system to cool completely. Open the hood and inspect the muffler and pipes for cracks or damage. Check for weak or missing retaining springs or damper/support grommets.

⚠ WARNING

Hot exhaust system parts can cause serious burns. Allow adequate time for the exhaust system to cool. Never perform this procedure with the engine running.

Coolant

The coolant supplied in the system is a 50/50 mixture of ethylene-glycol and distilled water. This mixture provides protection against freezing at temperatures to -34° F (-37° C). If greater protection is required, the percentage of antifreeze to water may be increased. Use Premium 60/40 anti-freeze coolant, which is already premixed and ready to use. Do not dilute with water. Never exceed a 60% antifreeze/40% water mixture. Contact your dealer if greater protection is required. See page 111 for Polaris products.

NOTE: Never add tap water to the cooling system. Minerals cause deposits and may react adversely with the metals in the engine and cooling system.

General Maintenance

Coolant High Temperature Indicator Light

The high temperature indicator light is controlled by a switch in the ECU. If the engine coolant reaches a certain temperature, the switch completes a circuit that turns the light on. If you must drive your machine after the high temperature indicator light has come on, drive slowly and stop frequently to allow the engine to cool down. See your dealer.

Coolant Level

The engine coolant level is controlled by the recovery system. The recovery system components are:

- Coolant bottle or overflow tank
- Engine filler neck
- Pressure cap
- Connecting hoses

Always maintain the coolant level between the minimum and maximum marks on the coolant bottle (when engine is cold) to prevent overheating and serious engine damage.

CAUTION

Operating the snowmobile with insufficient coolant will result in overheating and serious engine damage. Always maintain the coolant level as recommended.

Flushing the Cooling System

To ensure that the coolant maintains its ability to protect the engine, the system should be completely drained every two years and a fresh mixture of antifreeze and distilled water should be added. This service must be done when the engine is cold. Ask your Polaris dealer to check the coolant when he performs the fall tune-up on your snowmobile.

MAINTENANCE
General Maintenance
Bleeding the Cooling System

Use of a non-standard pressure cap will not allow the recovery system to function properly. If the pressure cap needs replacement, contact your dealer for the correct part.

⚠ WARNING

Steam and hot liquids will cause serious burns to your skin. Never bleed the cooling system or remove the pressure cap when the engine is warm or hot.

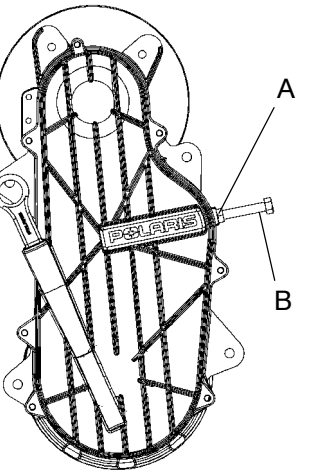
CAUTION

If coolant flow becomes restricted or plugged, coolant loss, air lock or engine damage may result. Most cooling systems are equipped with a filter that should be periodically inspected or replaced.

1. Remove the pressure cap and fill the coolant bottle with properly mixed coolant to the maximum mark.
2. Elevate the front end of the machine slightly to aid in bleeding of the heat exchangers.
3. Remove the bleed screw from the water outlet manifold and/or the thermostat housing. Allow the coolant to bleed through the system until it runs out the bleed holes. Reinstall the bleed screw into the manifold.
4. Add coolant to the coolant bottle to the maximum mark.
5. Start the engine and run at a fast idle for two to three minutes. Loosen the bleed screw occasionally to purge any trapped air.
6. Stop the engine and check the coolant bottle level. Fill as required.
7. Feel the heat exchangers under the running boards. If the system is bled properly, they'll be warm to the touch. If they're not, repeat step 5. Lift the front of the machine slightly to assist in the bleeding.
8. Replace the pressure cap and carefully lower the front end of the machine.

General Maintenance

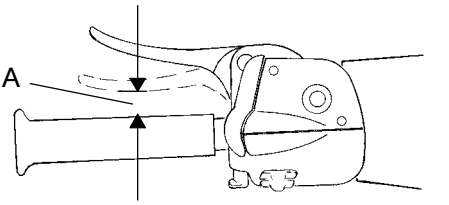
Drive Chain Tension



Check drive chain tension weekly and before each long trip. To obtain correct chain tension:

1. Rotate the driven clutch counterclockwise to move all chain slack to the tensioner side. Lock the brake lever lock, or have an assistant hold the brake lever firmly.
2. Loosen the adjuster bolt jam nut (A).
3. Finger tighten the adjuster bolt (B) until it can no longer be adjusted by hand, then back off 1/4 turn.
4. Tighten the jam nut while holding the adjuster bolt. Torque to 21 ft. lbs. (28 Nm).
5. Release the brake lever lock.

MAINTENANCE
General Maintenance
Hydraulic Brake Inspection



Inspect the brake lever reserve before each use of the snowmobile.

Firmly depress the brake lever and measure the clearance between the lever and handlebar grip. This distance, called brake lever reserve (A), should be no less than 1/2″ (1.3 cm).

Brake pads must be replaced when the brake pad material becomes thinner than the backing plate (approximately 1/16″). A kit is available for replacing brake pads. See your dealer.

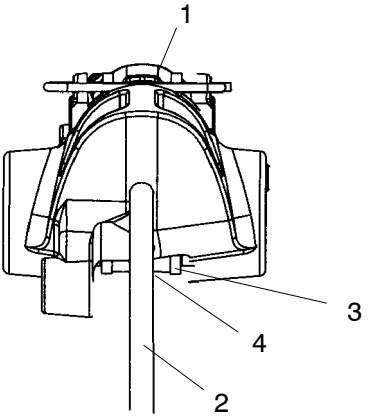
⚠ WARNING

Brake failure during operation can result in serious injury or death. Properly functioning brakes are vital to your safety. Be sure the brake pads do not drag on the disc and that brake lever travel is not excessive.

Always replace brake pads when the brake pad material becomes thinner than the backing plate (approximately 1/16″).

General Maintenance

Brake Components



1. Brake Caliper
2. Brake Disc
3. Backing Plate
4. Brake Pad Material (Replace when thickness is less than 1/16″/1.5mm).

Excessive Lever Travel

Hydraulic brakes are self-adjusting, but if excessive brake pad clearance develops (see page 90), bring the machine to an authorized Polaris dealer for inspection and adjustment.

MAINTENANCE
General Maintenance
Brake Fluid

⚠ WARNING

After opening a bottle of brake fluid, always discard any unused portion. Never store or use a partial bottle. Brake fluid is hygroscopic, meaning it rapidly absorbs moisture from the air. The moisture causes the boiling temperature of the brake fluid to drop, which can lead to early brake fade and the possibility of accident or serious injury.

⚠ WARNING

Keep the master cylinder cover free of dirt and debris. The vent slits allow for diaphragm movement, and if they become plugged, movement of brake fluid below the diaphragm may be restricted, altering brake function.

CAUTION

Brake fluid will damage decals, paint and some plastics. Always wipe up spills immediately.

Replace brake fluid at least every two years with Polaris DOT 4 high temperature brake fluid. See page 111 for the part numbers of Polaris products.

The brake fluid level can be seen through a plastic sight glass in the brake reservoir. If the fluid is sufficient, the sight glass will be black. If the sight glass is any color other than black, add brake fluid.

General Maintenance

Bleeding the Hydraulic Brake System

Air in the hydraulic brake system will cause spongy brake lever action. Bleed the system before operating the snowmobile.

⚠ WARNING

Operating the vehicle with a spongy brake lever can result in loss of brakes, which could cause an accident and lead to serious injury or death. Never operate the vehicle with a spongy-feeling brake lever.

During the bleeding procedure, keep the brake handle as level as possible. The reservoir must be in this position to minimize the possibility of air entering the system through the reservoir vent.

1. Remove brake master cylinder reservoir cover and gasket.
2. Fill the master cylinder reservoir to between the MIN and MAX marks or 1/4-5/16″ (.6-.8 cm) below the lip of the reservoir opening. Reinstall the gasket and cover.
3. Slip a rubber tube over the ball of the bleeder valve and direct the flow of fluid into an approved container.
4. Squeeze the brake lever a full stroke. Then unscrew the bleeder valve 3/4 of a turn to release air.
5. Close the bleeder valve and release the brake lever.
6. Repeat steps 4 and 5 until fluid flows from the bleeder valve in a solid stream free of air bubbles.

⚠ WARNING

Overfilling the master cylinder leaves no room for fluid expansion and may cause the brakes to lock, resulting in serious injury or death. Always add brake fluid to the fill line as recommended.

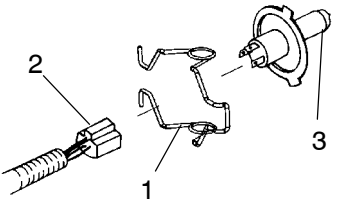
7. After bleeding is complete, refill the reservoir to the proper level. See page 92.
8. Reinstall the gasket and cover.

MAINTENANCE
General Maintenance

NOTE: Do not touch a halogen bulb with bare fingers. Oil from skin leaves a residue, causing a hot spot that will shorten the life of the lamp.

Removing Halogen Bulbs

1. Remove the plenum covering from the headlight assembly.
2. Lift the rubber boot to expose the bulb.
3. Push down on the spring (1) to release it from the housing.
4. With the wire harness (2) attached to the bulb (3), withdraw the bulb from the housing.
5. Grasp the bulb by its metal base and carefully separate the bulb from the harness.



Installing Halogen Bulbs

1. Hold the bulb by its metal base and install it into the wire harness.
2. Insert the bulb into the housing.
3. Connect the spring to the housing.
4. Carefully flip the spring back into the housing, placing it around the wire harness.
5. Reinstall the plenum covering on the headlight assembly.
6. Verify headlight aim.

Replacing Taillight Bulbs

1. Remove the screws securing the taillight lens.
2. Push the bulb in and twist counterclockwise and replace the bulb.
3. Replace the taillight lens.

General Maintenance

Clutch System

⚠ WARNING

If you become aware of higher than normal clutch engagement or an unusual vibration or shift pattern, see your dealer immediately. Do not operate the machine until repairs have been made.

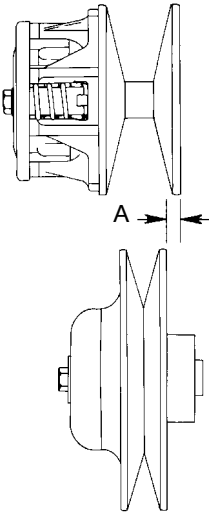
All clutch maintenance and repairs must be performed by an authorized Polaris dealer. Any unauthorized modifications to clutches, such as adding or removing weights, will void the warranty.

CAUTION

The bushings in the weights and rollers of Polaris clutches are made of a material that may be damaged if lubricated. Do not lubricate clutch bushings.

Periodically inspect clutch sheaves for damage, wear or belt residue. To maintain optimum performance, clean with non-oil based cleaners such as isopropyl alcohol.

Clutch Alignment and Offset



Clutch alignment offset (A) is important for maintaining optimum performance. See your Owner's Manual Supplement for the recommended offset between the drive and driven clutches with the belt removed.

Belt width and length must match the center distance of the clutches and sheave width of the drive clutch. Polaris recommends the use of O.E.M. belts. Other belts may match the dimensions, but can drastically change the shift pattern, resulting in poor performance. See your dealer for service and adjustments.

NOTE: A worn belt will continue to function, but will not deliver maximum performance. Always carry a spare belt in case of an emergency.

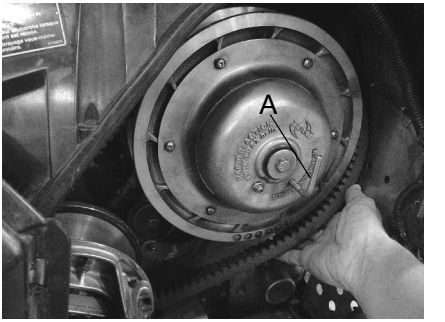
MAINTENANCE
General Maintenance
Drive Belt Condition

Periodically check the condition and tension of the drive belt, and always carry a spare. Inspect the belt for signs of excessive wear: frayed edges, missing cogs, cracks and excessive looseness. Replace the belt if any of these conditions exist.

For improved drive-away during extremely cold temperatures, remove the belt and warm it to room temperature. Reinstall it before starting the snowmobile.

Drive Belt Removal

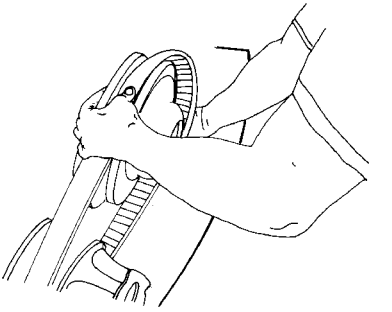
1. Be sure the key switch is off and the engine has come to a complete stop. Apply the brake (or lock the parking brake if equipped).
2. Open the hood. Remove the left side panel to access the drive clutch.
3. Locate the L-wrench in the tool kit. Install the wrench into the open threaded hole in the outer sheave of the clutch (A).
4. Turn the wrench clockwise until the sheaves open far enough to remove the belt.



General Maintenance

Drive Belt Installation

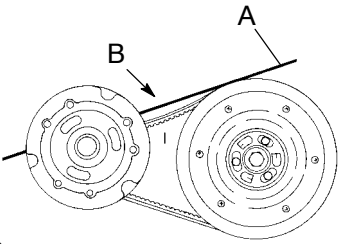
1. Drop the drive belt over the drive clutch and pull back the slack.



NOTE: To ensure satisfactory belt life, install belts so they operate in the same direction of rotation by positioning the identification numbers so that you can read them. If required, separate the sheaves as outlined in the belt removal procedures.

2. Rotate the L-wrench counter-clockwise to tighten the sheaves while working the belt to the outer edge of the sheaves.
3. Remove the wrench and store it in the tool kit.
4. Reinstall the side panel.
5. Close and secure the hood.

MAINTENANCE
General Maintenance
Drive Belt Deflection



Measure belt deflection with both clutches at rest and in their full neutral position.

Place a straight edge on the belt (A) and apply downward pressure while measuring at point B. This measurement should be 1 1/4” (3.2 cm).

Drive Belt Adjustment

TEAM Clutch

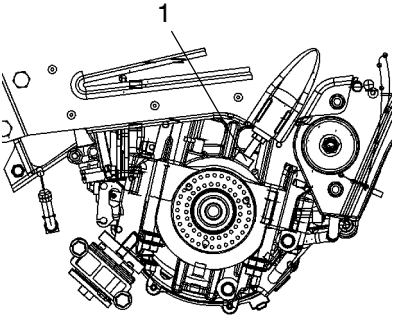
1. Loosen the 7/16” jam nut on the belt width adjuster.
2. Using a 1/8” Allen wrench, adjust the threaded set screw as needed.

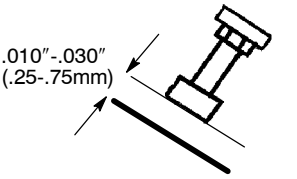
NOTE: Turn the set screw in (clockwise) to increase the distance between the sheaves and out (counterclockwise) to decrease the distance.

3. Tighten the jam nut.

Torque Stop

Periodically check torque stop (1) clearance. With clutches in proper alignment, the clearance should be a minimum of .010″ to a maximum of .030″ from the engine case (2). Adjust if necessary. Lock the jam nut.



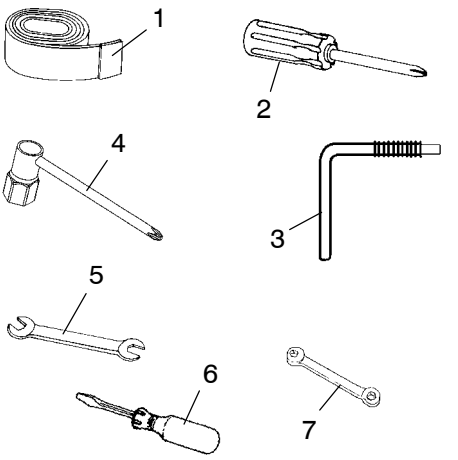


General Maintenance

Tool Kit

A tool kit is included with each machine for emergency and routine maintenance. Always keep the tool kit with the snowmobile.

1. Emergency Start Strap
2. Phillips Screwdriver
3. L-Wrench
4. Spark Plug Wrench
5. Wrench
6. Flat Screwdriver
7. Box End Wrench



Fall Tune-Up

For maximum performance, arrange for a fall service tune-up with your Polaris dealer.

Maintenance Items

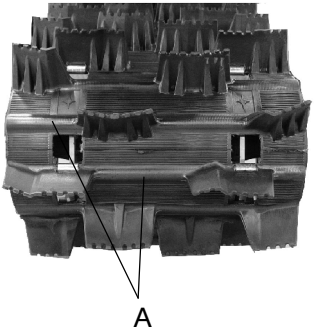
The tools and maintenance items mentioned in this book, as well as a long line of other Polaris accessories, are available at your Polaris dealer.

MAINTENANCE
Track Maintenance
Track Inspection

⚠ WARNING

Broken track rods are a serious safety hazard. They can cause a rotating track to come off the machine, which could cause serious injury or death. Never operate with a damaged track. Never rotate a damaged track under power.

1. Using a hoist, safely lift and support the rear of the snowmobile off the ground.
2. Rotate the track by hand to check for damage.
3. Carefully examine the track along the entire length of each rod (A). Bend the track to check for breakage.
4. Replace the track if any rod damage is found.



Track Lubrication

⚠ WARNING

Operating with insufficient lubrication between the slider and track guide clips can cause track failure, loss of vehicle control and loss of braking ability, which can result in serious injury or death.

Avoid operating for extended periods on ice and other surfaces that have little or no snow for lubrication.

The slide rail requires adequate snow cover for sufficient lubrication. Excessive wear indicates insufficient lubrication. A new slider can cause faster heat build-up in limited lubrication, resulting in excessive wear.

NOTE: Track damage or failure caused by operation on ice or under other poor lubrication conditions will void the track warranty.

CAUTION

High speed use on hardpacked surfaces is not recommended for models equipped with a deep lug track. Track lug damage may occur. Keep high speed use to a minimum, including frequent slow-speed intervals for track cooling.

Track Maintenance

⚠ WARNING

Moving parts can cut and crush body parts. When performing the checks and adjustments recommended on the following pages, stay clear of all moving parts. Never perform track measurement or adjustments with the engine running.

Track Tension

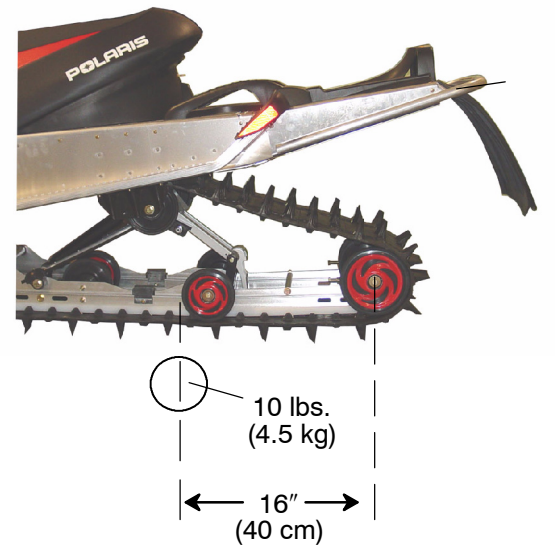
Track adjustment is critical for proper handling. Always maintain correct tension and alignment.

Tension adjustments should be made only after the track is warmed up and limber.

1. Turn the machine off.
2. Lift the rear of the machine and safely support it off the ground.
3. Place the recommended weight or downward pressure on the track at the specified distance (see chart on page 102) ahead of the center of the rear idler wheel.

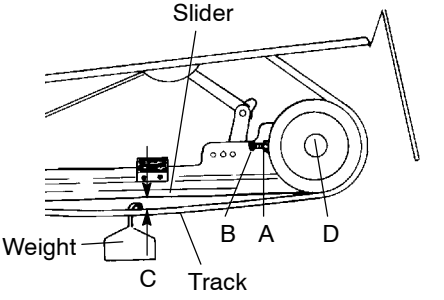
NOTE: Measure at the point where the weight is hanging.

4. Check for specified slack between the wear surface of the track clip and the plastic slider.



MAINTENANCE
Track Maintenance
Track Tension

If the track needs adjustment:



5. Loosen the rear idler shaft bolt (D).
6. Loosen the locknuts (A).
7. Tighten or loosen the track adjusting screws (B) as necessary to provide equal adjustment on both sides of the track.
8. Repeat the measurement on the other side of the track.

NOTE: Check more frequently when the machine is new.

9. Start the machine and slowly rotate the track at least five revolutions. Let the track come to a stop (do not apply brakes).
10. Check track alignment (see page 103) and adjust as necessary.
11. Tighten the locknuts (A).
12. Tighten the idler shaft bolts (D) and torque to 35 ft. lbs. (47.5 Nm).

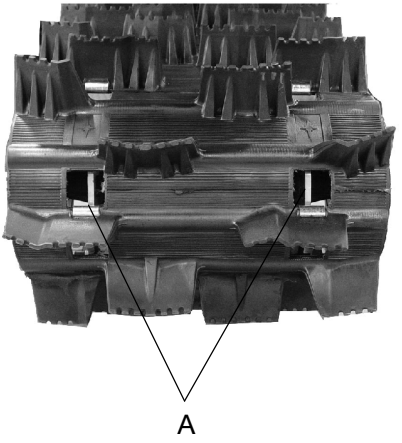
Track Tension Data

Suspension	Weight	Measurement Location	Measurement
IQ RMK	10 lbs. (4.54 kg)	16″ ahead of rear idler shaft	3/8″ - 1/2″ (1 - 1.3 cm)
IQ SwitchBack	10 lbs. (4.54 kg)	16″ ahead of rear idler shaft	3/8″ - 1/2″ (1 - 1.3 cm)

Track Maintenance

Track Alignment

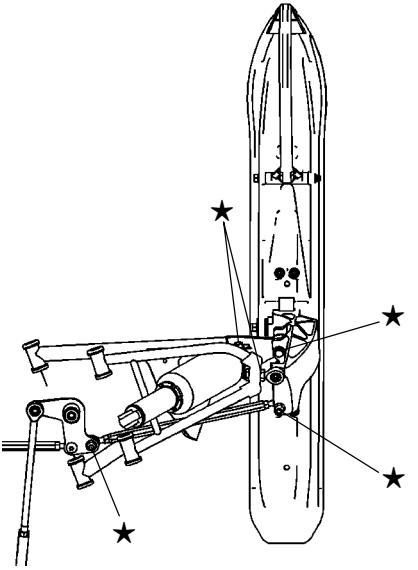
Periodically check that the track is centered and running evenly on the slide rails. Misalignment will cause excessive wear to the track and slide rail.



1. Safely support the rear of the machine with the track off the ground.
2. Start the engine and apply a small amount of throttle until the track turns *slowly* at least five complete revolutions. Stop the engine and let the track come to a stop (do not apply brakes).
3. Inspect track alignment by looking through the track window to make sure the rails (A) are evenly spaced on each side. If the track runs to the left, loosen left locknut and tighten the left adjusting bolt. If the track runs to the right, loosen right locknut and tighten the right adjusting bolt.
4. After adjustments are complete, tighten locknuts and torque idler shaft bolts to 35 ft. lbs. (47.5 Nm).
5. Repeat steps 2 and 3 to verify proper alignment.

MAINTENANCE
Steering System
Steering Inspection and Adjustment

Each week, or before a long ride, check all steering system fasteners and tighten if necessary.



Steering System

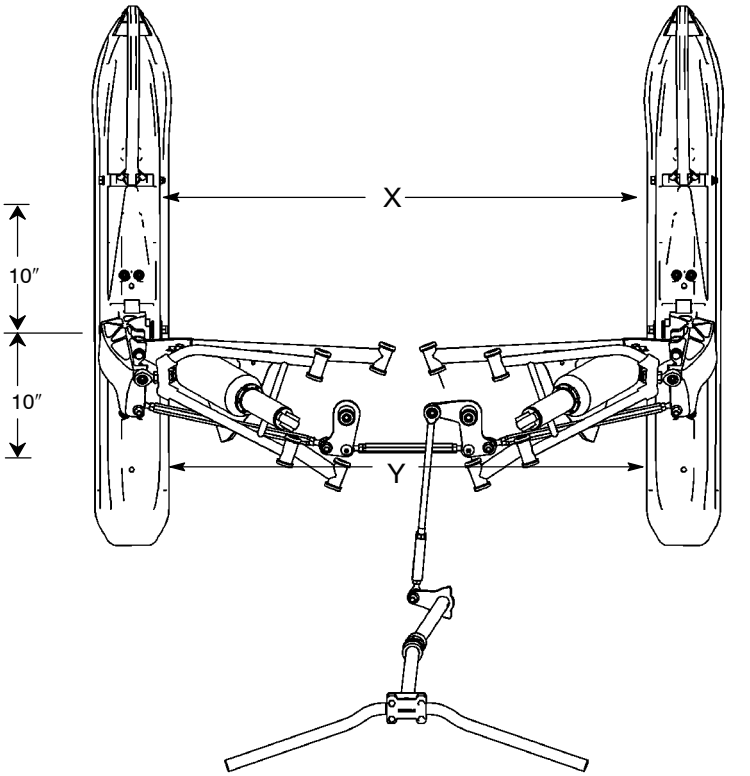
Ski Alignment

⚠ WARNING

Improper ski alignment or adjustment may cause loss of steering control, resulting in serious injury or death. Do not attempt to change the ski alignment or camber adjustment. See your Polaris dealer.

With the handlebars in a straight ahead position, and with vehicle weight compressing the suspension, measure from the straight edge of the skis at the center of the ski mounting bolt. The measurement between the skis at point X should be 1/8″ to 1/4″ greater than the measurement at point Y.

NOTE: If the skis are misaligned, we recommend that your dealer correct the alignment, since camber adjustment may also be affected.



MAINTENANCE
Steering System
Ski Skags

⚠ WARNING

Worn skis and/or skags will adversely affect handling. Loss of vehicle control may result, causing serious injury or death.

See your dealer's studding chart for recommended skags. If you install longer or more aggressive carbide skags than the original equipment, it may also be necessary to add track studs to maintain proper vehicle control while turning on hard-packed snow or ice.

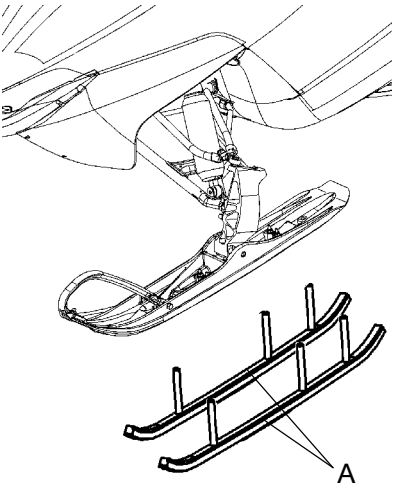
Check skags before each use of the snowmobile to ensure positive steering characteristics. Skags must be replaced when worn to half their original diameter.

NOTE: Carbide skags must be replaced if *any* abnormal wear or chipping is found.

Skag Replacement

1. Raise and support the front of the machine so the skis are approximately 6″ (15.2 cm) from the ground.
2. Remove the attaching nuts and pry the skag (A) downward.
3. Remove the forward portion of the skag.

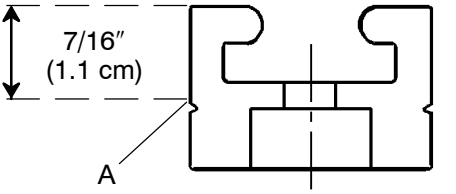
Reverse this procedure for new skag installation.



Suspension Maintenance

Slider Wear

Measure slider thickness at several points along the rail. Have your dealer replace the slider when it's worn down to the top of the wear groove (A). Do not operate the snowmobile if slider thickness measures less than 7/16″ (1.1 cm).



Pre-Ride Suspension Inspection

Loose nuts and bolts can reduce your snowmobile's reliability and cause needless repairs and down time. Before beginning any snowmobile trip, a visual inspection will uncover potential problems. Check the following items on a weekly basis or before any long trip:

- Check suspension mounting bolts for tightness.
- Check rear idler wheel bolts for tightness. See page 102.
- Check rear idler adjusting bolt locknuts for tightness.
- Check front torque arm limiter strap condition.
- Check slide rail condition. See page 107.
- Check track tension. See page 102.
- Lubricate all rear suspension components. See page 80.
- Check ski runner/skag condition.
- Check ski spindle bolts for tightness.
- Check tie rod end nuts for tightness.

MAINTENANCE
Suspension Maintenance

Extended Storage

Off-season or extended storage of your snowmobile requires preventive measures to aid against deterioration and to prolong the useful life of many components. See page 111 for the part numbers of Polaris products.

Cleaning and Preservation

Proper storage starts with cleaning, washing, and waxing the hood, chassis, and plastic parts. Wipe down remaining surfaces with a damp cloth. Clean and touch up with paint any rusted or previously painted surfaces. Be sure that corrosive salt and acids are removed from surfaces before beginning preservation with waxes and rust inhibitors (grease, oil or paint).

The machine should be stored in a dry garage or shed, out of direct sunlight, and covered with a fabric snowmobile cover. Plastic tarp may cause condensation to form and damage snowmobile components.

Controls and Linkage

All bushings, spindle shafts, tie rod ends, and cables should receive a light coat of oil or grease.

Extended Storage

Bearings

Grease the jackshaft and drive shaft clutch side bearings with Polaris Premium All-Season Grease or a similar high quality grease to prevent corrosion.

Clutch and Drive System

Remove the drive belt and store in a cool dry location. Do not lubricate clutch components, except the driven clutch shaft bushing as outlined in the Master Repair Manual. See your dealer.

Engine Protection

Proper preparation of the engine and fuel system is vital to the prevention of rust and corrosion on precision engine parts during storage. Whenever the machine is stored for a period of more than 60 days, the engine must be fogged with fogging oil. Follow the engine fogging instructions provided on the container.

Always add Premium Carbon Clean or a fuel conditioner/stabilizer to the fuel tank. Follow the instructions on the container, running the engine for five minutes to get additives through the entire fuel system. Top off with fresh fuel. Do not allow the snowmobile to run out of fuel. See page 67.

MAINTENANCE
Extended Storage
Electrical Connections

Replace worn or frayed electrical wire and connectors. Be sure wiring harness is properly secured away from sharp edges, steering linkage, moving parts, and hot exhaust parts.

Track and Suspension

Moderate track tension should be maintained during summer storage. The machine should be supported off the ground to allow the track to hang freely. See illustration.

Transporting the Snowmobile

Whenever the snowmobile is transported:

1. Be sure the fuel cap and oil cap are installed correctly.
2. Always tie the snowmobile to the transporting unit securely using suitable straps.
3. Remove the ignition key to prevent loss.

POLARIS PRODUCTS

Part No.	Description
	Engine Lubricants
2870791	Fogging Oil (12 oz. Aerosol)
2871098	Premium 2-Cycle Engine Oil (qt.)
2871097	Premium 2-Cycle Engine Oil (gal.)
2871240	Premium 2-Cycle Engine Oil (2.5 gal.)
2871721	Premium Gold Synthetic 2-Cycle Engine Oil (qt.)
2871722	Premium Gold Synthetic 2-Cycle Engine Oil (gal.)
2872347	Premium Gold Synthetic 2-Cycle Engine Oil (2.5 gal.)
2874438	VES II Synthetic 2-Cycle Engine Oil (qt.)
2874439	VES II Synthetic 2-Cycle Engine Oil (gal.)
2874443	VES II Synthetic 2-Cycle Engine Oil (2.5 gal.)
	Chaincase Lubricants
2873105	Synthetic Chaincase Lubricant (qt.)
2872951	Synthetic Chaincase Lubricant (12 oz.)
	Grease / Specialized Lubricants
2871312	Grease Gun Kit, Premium All Season (3 oz.)
2871322	Premium All Season Grease (3 oz. cartridge)
2871423	Premium All Season Grease (14 oz. cartridge)
2871329	Dielectric Grease (Nyogel™)
	Coolant
2871323	Anitfreeze, 60/40 Premix (gal.)
2871534	Anitfreeze, 60/40 Premix (qt.)
	Additives / Miscellaneous
2871326	Carbon Clean Plus (12 oz.)
2870652	Fuel Stabilizer (16 oz.)
2870990	DOT3 Brake Fluid (12 oz.)
2872893	Engine Degreaser (12 oz.)
2870505	Isopropyl
2872889	Brake and Clutch Cleaner
2872890	Carb and Throttle Body Cleaner

TROUBLESHOOTING
Engine Troubleshooting

CAUTION: Unless you have experience and training in two-cycle engine repair, see your dealer if technical problems arise.

Problem	Probable Cause	Solution
Erratic engine operating RPM during acceleration or load variations	Drive clutch binding	• SEE YOUR DEALER.
	Driven clutch malfunction	• SEE YOUR DEALER.
Harsh drive clutch engagement	Drive belt worn or too narrow	• Replace the drive belt.
	Excessive belt/sheave clearance	• SEE YOUR DEALER.
Drive belt turns over	Wrong belt for application	• Replace the drive belt.
	Clutch alignment out of spec	• SEE YOUR DEALER
	Engine mount broken or loose	• Inspect and replace. SEE YOUR DEALER.
Machine fails to move	Clutch jammed	• Check for twisted belt or broken spring. SEE YOUR DEALER.
	Track jammed	• Foreign object may be caught or the slider melted to the track clips due to lack of lubrication. • Track may be iced up or frozen to the ground.
	Chaincase sprocket or chain jammed or broken	• Chain is loose or broken or chain tightener is loose. SEE YOUR DEALER.

Engine Troubleshooting

Problem	Probable Cause	Solution
Noise in drive system	Broken drive clutch components	• SEE YOUR DEALER.
	Bearing failure/ chaincase, jackshaft, or front drive shaft	• SEE YOUR DEALER.
	Drive belt surface flat spots	• Inspect and replace as needed.
	Drive chain loose	• Inspect and adjust (or replace).
	Drive chain worn, sprocket teeth broken	• SEE YOUR DEALER.
Poor low RPM performance	Worn drive belt	• Inspect and replace as needed.
	Excessive belt/sheave clearance	• SEE YOUR DEALER.
	Loose torque stop	• Inspect and adjust.
	Sticky clutch	• SEE YOUR DEALER.
	Poor fuel quality	• Use premium fuel (91 octane or higher)
Engine doesn't turn	Seized engine	• SEE YOUR DEALER. Seizure is a result of poor lubrication, inadequate fuel supply, broken parts or improper cooling.
	Hydrostatic lock	• Fuel may have entered the crankcase while the vehicle was standing or being transported. SEE YOUR DEALER to correct the cause. Drain plug(s) are located on the lower crankcase for emergency draining.

TROUBLESHOOTING
Engine Troubleshooting

Problem	Probable Cause	Solution
Engine turns but fails to start	Faulty ignition	• Install new spark plug(s). If engine still fails to start, check for spark. If there's no spark, SEE YOUR DEALER.
	No fuel to engine	• Check the fuel tank level and fill with correct fuel. • Ice may be in the fuel line, filter or pump. Add isopropyl alcohol to the fuel system.
	Poor engine compression	• Mixture is too lean. This indicates a major engine problem that must be repaired before the engine is run. SEE YOUR DEALER.
Engine lacks power	Fouled or defective spark plug	• Replace the plug.
	Fuel filter (loss of high RPM power)	• SEE YOUR DEALER.
	Incorrect clutching	• SEE YOUR DEALER.
Engine continually backfires	Faulty plug(s)	• Change plug(s).
	Fuel System	• Dirt or ice may be in the fuel system (deicer should be added to non-ethanol fuel at all times for assurance against fuel line icing).
	Incorrect throttle free-play or faulty switch	• SEE YOUR DEALER
Engine requires more than normal pulls to start	Poor gasoline or not enough fuel getting to engine	• Replace with fresh winter fuel.
Engine backfires but fails to start	Spark plug wires may be on wrong cylinder	• Reinstall spark plug wires to the corresponding cylinder.

Suspension Troubleshooting

Problem	Solution (perform only one change at a time)
Rear suspension bottoms too easily	- Verify sag dimension (see set-up decal). Adjust torsion spring blocks or install optional torsion springs to achieve correct sag dimensions. - Increase shock compression damping (see page 49).
Rear suspension rides too stiff	- Check for binding suspension components and grease all pivot points. - Verify sag dimension (see set-up decal). Adjust torsion spring blocks or install optional torsion springs to achieve correct sag dimensions. - Decrease shock compression damping (see page 49).
Too much weight transfer when climbing	- Verify sag dimension (see set-up decal). Adjust torsion spring blocks or install optional torsion springs to achieve correct sag dimensions. - Move limiter strap on front torque arm to high position (see set-up decal).
Too little weight transfer when climbing	- Verify sag dimension (see set-up decal). Adjust torsion spring blocks or install optional torsion springs to achieve correct sag dimensions. - Move limiter strap on front torque arm to low position (see set-up decal).
Front end pushes	- Check for worn skags - Check for binding front suspension shafts and steering components, grease all pivot points (elevate front of machine). - Verify sag dimension (see set-up decal). Adjust torsion spring blocks or install optional torsion springs to achieve correct sag dimensions. - Increase IFS preload (premium only) (see page 44). - Move limiter strap on front torque arm to high position (see set-up decal).
Steering is heavy	- Check skags and skis for damage. - Check for binding front suspension shafts and steering components, grease all pivot points (elevate front of machine). - Verify sag dimension (see set-up decal). Adjust torsion spring blocks or install optional torsion springs to achieve correct sag dimensions. - Decrease IFS preload (premium only) (see page 44).
Machine darts from side to side	- Ensure skis are properly aligned (see page 105). - Check for binding front suspension shafts and steering components, grease all pivot points (elevate front of machine). - Ensure skags are straight on skis.

TROUBLESHOOTING
Belt Troubleshooting

Belt Wear/Burn Diagnosis	
Causes	**Solutions**
Driving at low RPM	• Drive at higher RPMs. Gear the machine down. Check belt deflection.
Insufficient warm-up	• Warm the engine at least five minutes. Take the drive belt off the machine in extremely cold weather and warm it up. Break machine loose from the snow.
Towing at low RPM	• Do not tow in deep snow. Use fast, aggressive throttle to engage clutch.
Riding with high RPM and slow speed (8000 RPM/10 MPH)	• Lower the gear ratio. Reduce RPM. Avoid riding in high ambient temperatures. Check for snow ingestion.
Ice and snow build-up between track and tunnel	• Warm the engine at least five minutes. Take the drive belt off the machine in extremely cold weather and warm it up. Break machine loose from the snow.
Poor engine performance	• Check for fouled plugs or water, ice, or dirt in the gas tank or fuel line.
Loading machines onto trailers	• Skis may gouge into trailers and prevent the drivetrain from spinning properly. Use enough speed to drive the machine completely onto the trailer. Push and pull it to finish loading if necessary.
Clutch malfunction	• Inspect clutch components. See your dealer.
Slow, easy clutch engagement	• Use fast, aggressive throttle to engage clutch.

Service And Warranty Information

Obtaining Service and Warranty Assistance

Read and understand the service data and the Polaris warranty information contained in this manual. Contact your Polaris dealer for replacement parts, service or warranty. Your dealer receives frequent updates on changes, modifications and tips on snowmobile maintenance, which may supersede information contained in this manual. Your dealer is also familiar with Polaris policies and procedures and will be happy to assist you.

When contacting us about parts, service, or warranty, always provide the following information:

1. Serial number
2. Model number
3. Dealer name
4. Date of purchase
5. Details of trouble experienced
6. Length of time and conditions of operation
7. Previous correspondence

Use the page provided near the front of your Owner's Manual to record the identification numbers of your snowmobile and its engine.

Polaris Customer Service

United States: 1-763-417-8650

Canada: 1-204-925-7100

Polaris Anti-Theft System

The Polaris anti-theft system (PATS) monitoring program is designed to aid owners of registered snowmobiles in recovery of stolen machines.

Administration

1. Polaris snowmobile owner reports theft.
   A. In addition to notifying the proper law enforcement officials, the owner must call Polaris Customer Service.
   B. Owners must provide their name, address, telephone number and the model and serial number of stolen machines.
2. Polaris warranty will provide all dealerships with a monthly updated list of all stolen units to further monitor thefts.
3. Polaris warranty will aid in notifying the proper owner when a unit is recovered.

WARRANTY

Limited Warranty

Polaris Sales Inc., 2100 Highway 55, Medina, MN 55340, provides a ONE YEAR LIMITED WARRANTY on all components of the Polaris snowmobile against defects in material or workmanship. This warranty covers the parts and labor charges for repair or replacement of defective parts that are covered by this warranty. The warranty begins on the date of purchase. This warranty is transferrable to another consumer, during the warranty period, through a Polaris dealer.

Registration

At the time of sale, the Warranty Registration Form must be completed by your dealer and submitted to Polaris within ten days. Upon receipt of this registration, Polaris will record the registration for warranty. No verification of registration will be sent to the purchaser as the copy of the Warranty Registration Form will be the warranty entitlement. If you have not signed the original registration and received the customer copy, please contact your dealer immediately. NO WARRANTY COVERAGE WILL BE ALLOWED UNLESS THE SNOWMOBILE IS REGISTERED WITH POLARIS.

Initial dealer preparation and setup of your snowmobile is very important in ensuring trouble-free operation. Purchasing a snowmobile in the crate or without proper dealer setup will void your warranty coverage.

Warranty Coverage and Exclusions

Limitations of warranties and remedies

This warranty excludes any failures not caused by a defect in material or workmanship. The warranty does not cover accidental damage, normal wear and tear, abuse or improper handling. The warranty also does not cover any snowmobile that has been structurally altered, neglected, improperly maintained, used for racing or used for purposes other than for which it was manufactured. The warranty does not cover any damages that occur during trailer transit or as a result of unauthorized service or parts. In addition, this warranty does not cover physical damage to paint or finish, stress cracks, tearing or puncturing of upholstery material, corrosion or defects in parts, components or the snowmobile due to fire, explosions or any other cause beyond Polaris' control.

This warranty does not cover the use of unauthorized lubricants, chemicals, or fuels that are not compatible with the snowmobile.

The exclusive remedy for breach of this warranty shall be, at Polaris' exclusive option, repair or replacement of any defective materials, or components or products. THE REMEDIES SET FORTH IN THIS WARRANTY ARE THE ONLY REMEDIES AVAILABLE TO ANY PERSON FOR BREACH OF THIS WARRANTY. POLARIS SHALL HAVE NO LIABILITY TO ANY PERSON FOR INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY DESCRIPTION, WHETHER ARISING OUT OF EXPRESS OR IMPLIED WARRANTY OR ANY OTHER CONTRACT, NEGLIGENCE, OR OTHER TORT OR OTHERWISE. Some states do not permit the exclusion or limitation of incidental or consequential damages or implied warranties, so the above limitations or exclusions may not apply to you if inconsistent with controlling state law.

Limitations of warranties and remedies

ALL IMPLIED WARRANTIES (INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) ARE LIMITED IN DURATION TO THE ABOVE ONE YEAR WARRANTY PERIOD. POLARIS FURTHER DISCLAIMS ALL EXPRESS WARRANTIES NOT STATED IN THIS WARRANTY. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you if inconsistent with controlling state law.

How to Obtain Warranty Service

If your snowmobile requires warranty service, you must take it to a Polaris dealer authorized to repair Polaris snowmobiles. When requesting warranty service you must present your copy of the Warranty Registration form to the dealer. (The cost of transportation to and from the dealer is YOUR responsibility). Polaris recommends that you use your original selling dealer; however, you may use any Polaris Servicing Dealer to perform warranty service.

Please work with your dealer to resolve any warranty issues. Your dealer will contact the appropriate personnel at Polaris if additional assistance is needed.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

If any of the above terms are void because of state or federal law, all other warranty terms will remain in effect.

Engine Oil

1. Mixing oil brands or using non-recommended oil may cause engine damage. We recommend the use of Polaris engine oil.

2. Damage resulting from the use of non-recommended lubricants may not be covered by warranty.

WARRANTY

Conditions and Exclusions

In order to qualify for warranty, the product must have been properly set up and tested by a Polaris Dealer (if applicable). Failure of any dealer to perform the required vehicle Pre-Delivery Inspection, perform all applicable service bulletins and have the consumer sign the PDI form prior to delivery may void the warranty. Failure to provide proof of required periodic maintenance upon request may result in denial of warranty coverage. Use of the recommended Polaris products for lubrication and maintenance as directed by the Owner's manual is highly recommended. Should a failure occur during the warranty period resulting from the use of non-recommended products, warranty coverage may be denied.

Warranty does not apply to parts exposed to friction surfaces, stresses, environmental conditions and/or contamination. The following items are excluded from warranty consideration if the failure was due to wear or not the direct result of a defect:

Skis	Ski wear rods
Tracks	Slide rails
Suspension components	Finished and unfinished surfaces
Brake components	Carburetor/Throttle body components
Seat components	Engine components
Clutches and components	Drive belts
Steering components	Hydraulic components
Batteries	Circuit breakers/Fuses
Light bulbs/Sealed beam lamps	Electronic components
Idler wheels	

Warranty applies to the product only and does not allow for coverage of personal loss. Some items are considered "consumable," meaning they are considered part of normal maintenance or part of completing an effective repair. The following items are excluded from warranty coverage in the event of a warranty claim:

Spark Plugs	Lubricants such as oil, grease, etc.
Filters	Batteries (unless defective)
Fuel	Cosmetic damage/repair
Sealants	Coolants
Hotel fees	Meals
Towing charges	Shipping/ handling fees
Mileage	Product pick-up/delivery
Rentals/Loss of product use	Loss of vacation/personal time

This warranty also excludes failures resulting from improper lubrication; improper engine timing; improper fuel; surface imperfections caused by external stress, heat, cold or contamination; operator error or abuse; improper component alignment, tension, adjustment or altitude compensation; failure due to snow, water, dirt or other foreign substance ingestion/contamination; improper maintenance; modified components; use of aftermarket components resulting in failure; unauthorized repairs; repairs made after the warranty period expires or by an unauthorized repair center; use of the product in competition or for commercial purposes. Warranty will not apply to any product which has been damaged by abuse, accident, fire or any other casualty not determined a defect of materials or workmanship.

Polaris Second Year Engine Service Contract

Second Year Engine Service Contract is standard on all eligible new and unused snowmobiles that were Snow Checked through an authorized Polaris dealer during the March/April Snow Check promotion. The free Second Year Engine Service Contract is honored by all authorized Polaris snowmobile dealers in North America and is transferable 120 days after the original purchase date, free of charge, through any Polaris snowmobile dealer. Coverage on Snow Check units is automatic. Although you do not receive a warranty card, your dealership should have printed a copy of the warranty registration form. This form is your proof of warranty.

Consumer Exclusions

- Each repair visit after the first twelve months of standard warranty coverage is subject to a $50 deductible.
- The free Second Year Engine Service Contract applies to the first 5,000 miles or two (2) calendar years from date of purchase, whichever comes first. Tampering with the odometer shall void all warranties/service contracts. No extensions to coverage under this engine service contract can be given. Used snowmobiles are not eligible under this program.
- Snowmobiles used for commercial purposes or for racing are excluded from coverage.

Coverage

Coverage for second year engine failures due to defects in materials and workmanship will be determined by Polaris in its sole discretion. Coverage is automatic with no additional paperwork required. The free Second Year Engine Service Contract is subject to a $50 deductible per visit. Regular, documented service maintenance visits are required to validate this warranty.

A partial list of items excluded from coverage includes:

- Damage due to accident, fire, explosion, theft, or other causes beyond Polaris' control.
- Damage caused by the failure of other components of the snowmobile.
- Failures caused by improper fuel or oil.
- Piston seizures, unless caused by a defective engine component.
- Failures caused due to improper adjustments.
- Failure due to unauthorized service.
- Failures due to lack of service as required in the owner's manual or Polaris updates. This includes off-season storage as listed in the owner's manual.
- Failure due to use of unauthorized parts or modifications.
- Normal wear parts, including but not limited to spark plugs, hoses, batteries, controls, and recoil ropes are excluded from coverage. Gaskets are covered, as are intake and exhaust manifolds excluding paint coverage.
- Electrical coverage is limited to the ECU box, coils, stator plate, and sensors. Wiring and other electrical components are excluded from coverage.
- Cooling system coverage is limited to the water pump assembly and components, fan, fan bearings, temperature sensor, gasket and seals.
- Non wear related throttle body parts are covered. The fuel pump is covered.
- Clutches and related clutch parts, including but not limited to, the drive belt, are excluded from coverage.
- Electrical components are excluded from coverage.
- Gearcases and transmissions are excluded from coverage.

WARRANTY

Exported Vehicles

EXCEPT WHERE SPECIFICALLY REQUIRED BY LAW, THERE IS NO WARRANTY OR SERVICE BULLETIN COVERAGE ON THIS VEHICLE IF IT IS SOLD OUTSIDE THE COUNTRY OF THE SELLING DEALER'S AUTHORIZED LOCATION.

This policy does not apply to vehicles that have received authorization for export from Polaris Industries. Dealers may not give authorization for export. You should consult an authorized dealer to determine this vehicle's warranty or service bulletin coverage if you have any questions.

This policy does not apply to vehicles registered to government officials or military personnel on assignment outside the country of the selling dealer's authorized location.

This policy does not apply to Safety Recalls.

How to Get Service

In the Country where your vehicle was purchased:

Warranty or Service Bulletin repairs must be done by an authorized Polaris dealer. If you move or are traveling within the country where your vehicle was purchased, Warranty or Service Bulletin repairs may be requested from any authorized Polaris dealer who sells the same line as your vehicle.

Outside the Country where your vehicle was purchased:

If you are traveling temporarily outside the country where your vehicle was purchased, you should take your vehicle to an authorized Polaris dealer. You must show the dealer photo identification from the country of the selling dealer's authorized location as proof of residence. Upon residence verification, the servicing dealer will be authorized to perform the warranty repair.

If You Move:

If you move to another country, be sure to contact Polaris Customer Assistance and the customs department of the destination country before you move. Vehicles importation rules vary considerably from country to country. You may be required to present documentation of your move to Polaris Industries in order to continue your warranty coverage. You may also be required to obtain documentation from Polaris Industries in order to register your vehicle in your new country.

If Purchased From A Private Party:

If you purchase a Polaris product from a private citizen outside of the country in which the vehicle was originally purchased, all warranty coverage will be denied.

Notice

If your vehicle is registered outside of the country where it was purchased, and you have not followed the procedure set out above, your vehicle will no longer be eligible for warranty or service bulletin coverage of any kind. (Vehicles registered to Government officials or military personnel on assignment outside of the country where the vehicle was purchased will continue to be covered by the basic warranty.)

For questions call Polaris Customer Assistance (see page 117).

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